

American FORESTS

The Magazine of Forests, Soil, Water, Wildlife, and Outdoor Recreation
MAY 1960

50 CENTS



ON THE ART OF TOURING • SEE PAGE 10

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James B. Craig

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CONTENTS

- 6 MEETING OF MINDS SOUGHT ON H.R. 10465
- 7 WASHINGTON LOOKOUT • Albert G. Hall
- 9 EDITORIAL — Men Who Grow the World's Trees
- 10 ON THE ART OF TOURING • Michael Frome
- 14 SMOKEJUMPING UNDER THE MIDNIGHT SUN • Hans W. Trankle
- 17 CHASING THE RAINBOW • Joe Long and Sid DeLoach
- 18 THE CAROB CRUSADE • M. D. Logan
- 20 FORESTRY'S AMBASSADOR WITHOUT PORTFOLIO • James B. Craig
- 22 VICTIMS OF CIRCUMSTANCE • Larry J. Kopp
- 24 PRE-HISTORIC "SHANGRI-LA" • Morris Fradin
- 26 NEW PARK AT GREAT FALLS OF THE POTOMAC • Charles Edgar Randall
- 28 TREE FARMING SWEEPS THE COUNTRY • Ed Kerr
- 31 READING ABOUT RESOURCES • Monroe Bush
- 34 THE WONDERS OF A "WORTHLESS TREE" • Robert R. Bowers
- 37 BUFFALO BILL'S TOP HAND • M. W. Talbot
- 38 OLD MAN'S BEARD • Dev Klapp
- 44 MATTISON TO HEAD AFA PILOT STUDY
- 66 FEATURE PHOTO OF THE MONTH

THE COVER

The magnificent panorama of North Carolina's mountain ranges attracts thousands of visitors each year. (See "On the Art of Touring," page 10.) Photographs by Eastman Kodak.

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Forest Forum

Litterbugs

EDITOR:

In the article "Litterbugs Climb High" in the March issue of *AMERICAN FORESTS*, there was the tacit plea for a law to amend human nature. For those of us who like to commune with nature in the great out-of-doors, there is no sympathy for litterbugs and the efforts to curb their thoughtless actions will, we hope, eventually bear fruit.

No doubt you heard of the alert forest ranger in the Southwest who was able to get the address of some litterbugs from the license of their car. He packed all the litter and garbage from their campsite and shipped it back to them C.O.D.

On our vacation trips we carry a paper bag in the car for litter and dispose of it at the motel at the end of the day's drive. A deal might be worked out whereby such Anti-Litter Committees as were described could raise funds by placing "litter bags" on sale at motels. These bags could have proper slogans printed on them and sell for a dime. Just another idea to kick around for what it is worth, or perhaps it is an old idea that already has been kicked around and out.

Paul B. Davidson
4400 Fifth Ave
Pittsburgh 13, Pa.

EDITOR:

"Litterbugs Climb High" by Mr. W. F. Heald tells a sad story, but has an appeal with me since we too have tried to do something about litter. Several years ago we chartered the National No Litter Pitchin' Assn.—(non-profit) in Arkansas. We printed life membership cards, several of which are attached. These are used in many ways. Most youngsters have wallets, and what is better in a wallet than some sort of membership card?

One local member of a garden club tells me these cards are the making of talks she gives to school children. Earlier her talks did not seem to click, but with the cards she met with success because she got all the names and at the close gave each child his card. She worked in the main with children in the lower grades and kindergarten—who like to tell of what happened in school that day. Information from parents showed that these youngsters took the story home to parents and older sisters and brothers, who are more often the worst offenders.

We put a price of 2¢ on the membership to tie in with that approach of "For two cents I'll . . ." (make you a life member, etc.) Cards have been bought by motels, fishing clubs, Boy Scouts, etc. Some worked out an effective ritual like "Now raise your right hand and promise, etc." Scouts are able to sell two or more on every call and put the money into the scout kitty. They give a sales talk on cleanliness and "OOOOPS no litter pitching!"

The governor of this state liked the effort well enough to write his (then) 47 contemporaries asking each to tell me what litter pickup cost in his state—and other information. We received lots of information from every state but Ohio. The result was shocking—over 11 million dollars per year just for trash pickup on state and federal highways. Damage to equipment was also a big item—one state estimated that to be an additional \$30,000 for cut tires, broken mower blades, etc. California sent photos of special machinery built to gather trash. And no figures save North Carolina included the cost of pickup along county roads and city streets and in public places.

It is quite a story and we could tell you much more about it and the No Pitchin' Assn.—if you would like. Please pass this on to Mr. Heald since the use of the cards may be of help. Some have suggested that we make the price 5¢ to enable some people to put a bit more into the kitty. Having folks lay the 2¢ (or 5¢) down on the line is a good approach.

Huey G. Huhn
National No Litter Pitchin' Assn.
1204 So. Ninth
Rogers, Arkansas

Strange Bed Fellows?

EDITOR:

. . . I wish to thank you for a generally fine magazine. Although I must confess I am not in love with 50-ton bulldozers that

can "clear a 16-foot swath at one swipe" (December issue, page 59), I realize that the advertisements for such monsters probably make the publication of the magazine (in its present form) possible. One may say that bulldozers are only servants, but I think that they encourage the "bulldozer mentality" that has been ruining our suburbs—and maybe even our forests—for the past dozen years. Your list of members must contain some strange bed-fellows!

Donald Baillie
20 Wychwood Park
Toronto 4, Ontario

(It is quite true, as Mr. Baillie suggests, that our readership presents a quite varied and interesting cross-section of interests. But is this a bad thing? We are inclined to think not. While groups with completely kindred interests are fine, isn't there also a place for a melting-pot type of organization where all points of view can come together on a common meeting ground, so to speak? And if we do not know what the other fellow thinks, how can we ever hope to resolve our differences and get the conservation job done?

We readily admit we have been criticized in the past, sometimes bitterly, for presenting points of view decidedly at odds with those of certain sincere and dedicated groups. Ironically enough, the one group that has consistently urged getting all the facts out on the table, from all sources available, has been one that on occasion has been tabbed as "narrow-minded" in some quarters—namely, our professional foresters.

As for machinery, except for Univac, so far as we know none of it makes its own decisions as yet. It is invariably steered by people. And we have seen bulldozers literally bury enemy pillboxes on Pacific atolls thereby saving the lives of American men; we have also seen them stripping vast acreages in attractive wooded areas near big cities. And as Mr. Baillie himself notes, they are "only servants." *Editor*

Special Issue Planned

AMERICAN FORESTS will publish a special issue in honor of the Fifth World Forestry Congress in August. The lead article, "Forestry Under A Free Enterprise System," will be written by Dr. Wilson Compton, AFA board member, former president of Washington State University, State Department official, executive vice president of the National Lumber Manufacturers Association. The editorial, "This Is American Forestry," will be published in all three languages to be used at the Congress—English, French, and Spanish. A number of outstanding foreign foresters have accepted invitations to contribute to the issue and for the first time *AMERICAN FORESTS* finds itself in the translation business—just one more indication that the world is shrinking in size and that conservation communications is an ever-widening proposition.

More Leaders Required

EDITOR:

Reference the article in March 1960 issue by Mr. Howard Mendenhall, subject: What can we do about water?

It is this writer's opinion that the conservation units in the good old USA will have to work towards the election, on national and state levels, of senators and representatives who are in sympathy with this movement regardless of political party ties.

The present administration in Washington can see no good in anything unless special privilege and the predatory interests can make money out of it. Anything else is either Socialism, Communism, inflationary, etc. The money misappropriated by the present administration on the many

deals like Dixon-Yates, and money lost on giving away the people's right to the aforementioned interests would have gone a long way towards solving the water and all other conservation projects. The loss of Hell's Canyon Dam was another blow to conservation.

A lot of this money wasted could have been used to convert salt water to sweet water and all the desert country in the West could have been made to bloom and produce again on monies given away to special interests both in the giveaway to public water and forest resources and that given away to large aircraft manufacturers. You could keep on making a list of all the chicanery, and when you were through you would have enough earmarked to take care of the conservation needs for the next generation.

Population is growing fast. The cities are all becoming overcrowded and all are growing out into the country. The only way our country can be saved is to put some of the people back on the land, and I do not mean working for the factory farms. Every farm family should have enough land to make a living on, and the big factory farms should be broken up. In other words, quit paying these million dollar subsidy payments to some incorporated land companies. This is where water for the desert would be a life saver to this country and a lot of its population. The desert is moving east across the country at a steady pace. Floods, wind, and water erosion will in a generation or so put the desert on the west banks of the Mississippi River.

Hope this does not step on anyone's toes in the conservation movement but am afraid it will. Here's best wishes to all in the conservation movement. May it move forward in the future at a faster pace than in the past. We in this country need more leaders like Theodore Roosevelt, Gifford Pinchot, George Norris and Franklin D. Roosevelt. Here's hoping one makes his appearance in the very near future.

Austin Hough
1611 State St.
New Albany, Indiana

Not the Longest

EDITOR:

In a recent issue of AMERICAN FORESTS magazine there is a very interesting article by Robert J. Moser entitled "And Then There Was One," concerning a timber-fluming operation near Underwood, Washington. In the fourth paragraph is the statement, "It was also the longest ever built" (9 miles). This statement is in error, as you will see by the following information:

The McShane Timber Company, which operated in the north end of the Big Horn Mountains near Sheridan in the late 1890's and the early 1900's, built a timber flume from the tie-camp at Woodrock (elevation about 8,000 feet) which followed the south fork of Tongue River to its junction with north fork, then down through the box canyon to the town of Dayton (elevation about 4,000 feet), a total distance of about 35 miles. The cost of building the flume was estimated at one million dollars; it was used in whole or in part for about 15 years; its principal use was for transporting railroad ties, but also poles, posts, and some rough lumber. Remnants of the flume may still be seen today. . . .

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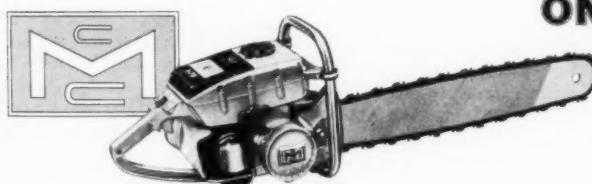
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Meeting of Minds Sought on H.R. 10465

News Flash—As AMERICAN FORESTS went to press there appeared to be new evidence that the Forest Service and representatives of the lumber industry may have resolved differences of opinion they may have had previously on the meaning and intent of the multiple use-sustained yield bill. As a result of conferences between the Forest Service and the NLMA and between the Forest Service and other representatives of the wood-using industry there are indications that the lumber industry will not oppose the bill and that the federal agency will propose additional clarifying language to the present bill to the effect that H.R. 10465 should be considered "supplemental" to the organic act of 1897 and not in "derogation" of it. This would appear to mean according to Webster, that the present bill would not decry, disparage, or lessen the meaning or purpose of the organic act of 1897. Meanwhile, the full House committee reported the bill out following an executive session on April 21.

REPRESENTATIVES of the Forest Service and the National Lumber Manufacturers Association have been having a series of get-togethers to see if they can effect a meeting of minds on H. R. 10465 (the multiple use-sustained yield bill covering the national forests). As of last report existing differences had not been reconciled, but there is some hope, for a number of businessmen, some of them associated with the National Association of Manufacturers, have also been working quietly to get the two groups together.

As reported in **AMERICAN FORESTS** in March and April, the bill, as presently written, would recognize that the "national forests are established for outdoor recreation, range, timber, watershed, and wildlife and fish purposes." This puts all the uses on the same administrative plateau, and the proposal is being loudly cheered in some quarters, especially by the grazing industry and recreation groups. For instance, AFA's announcement that it would

support the bill brought warm expressions of approval from representatives of both groups, and in the recreation category, some who had been critical of AFA for its stand on the Wilderness Bill now indicate that they are highly pleased, at least, by this new development.

Contrary to criticisms that are being made across the country, the lumber industry flatly denies that it is opposed to either multiple use or sustained yield. In a letter to Rep. Grant on April 4, Mr. M. B. Doyle, of National Lumber, stated, "The National Lumber Manufacturers Association has unequivocally in the past—and continues now—to support the multiple use and sustained yield principles in the management of the national forests consistent with the purposes set forth in the 1897 statute."

The key phrase here for a point of reference is "consistent with the purposes set forth in the 1897 statute." And the key clause in the organic act of 1897 so far as lumber is concerned is ". . . no public forest reservation shall be established except to improve and protect the forest within the reservation, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States."

Some representatives of lumber contend that this statute gives timber and water top billing on the forests, and that it is the management of these two resources that provides the chief purpose for the existence of the Forest Service. (As one lumberman commented, "Most men in the Forest Service are foresters, are they not?") To recognize these other uses, lumber is proposing that the organic act be amended to the effect that the national forests shall be administered for the purposes set forth in the organic act and "consistent with such purposes, for other uses as grazing, outdoor recreation, and fish and wildlife." Lumber also proposes a clause that "the renewable natural resources shall be managed on a sustained yield basis and the uses shall

be administered on a multiple use basis."

In lumber's opinion, such amendment would preserve the integrity of the organic act, provide Congressional recognition for grazing, outdoor recreation, and fish and wildlife, and recognize both multiple use and sustained yield.

As of last report, the Forest Service is taking a dim view of the lumber proposal. In the first place, the Forest Service denies that timber and water enjoy priority over other uses. The secretary's regulations, which recognize both multiple use and sustained yield as administrative functions, court decisions, other acts of Congress, and appropriations bills all tend to show that all the uses have enjoyed equal consideration for more than 50 years, the Forest Service indicates. All it is asking now, the Forest Service continues, is that Congress recognize all these uses and that it extend similar recognition to sustained yield and multiple use.

As Chief McArdle told the House Forestry Committee at the hearing, "We in the Department of Agriculture do not care in what order the various resources are listed, provided it is made abundantly clear either in the statute itself or in the legislative history that the resources will be given equal consideration in general and over the national forest system as a whole."

In fighting for what it terms the integrity of the organic act, National Lumber last month sent a supplemental statement to Rep. Grant's committee in which it developed a legislative history relating to the purposes for which national forests may be established and administered. Many past leaders including Wilson, Pinchot, and Graves are quoted. For instance, former Chief Graves is quoted as having said, "the national forests are set aside specifically for the protection of water resources and the production of timber."

In a statement filed with the House Agriculture Committee's subcommittee on forestry, the National

(Turn to page 61)



Washington Lookout

By ALBERT G. HALL

SENATE PROPOSES INCREASED FORESTRY FUNDS.

Acting on the appropriations bill for the Department of the Interior and related agencies (including the Department of Agriculture's Forest Service), the Senate has voted whopping increases, above the House-approved appropriations, of \$19,799,500 for the Forest Service, and \$4,079,000 for the Bureau of Land Management. Purpose of the Forest Service increases is chiefly to put the long-range program for the national forests on schedule. Many senators have indicated that they want to see this program launched and carried out without delay. In addition, the Senate approved an additional \$1,-000,000 for co-operative forest fire control programs with the states and \$250,000 additional for aid to the states in carrying out forest management among small woodland owners. While it is likely that the Senate additions will be moderated somewhat by the action of the Senate-House conferees on the bill, it is safe to assume now that the Forest Service will have a considerable increase over the funding requested in the Administration's budget for Fiscal Year 1961. Forest Service items affected by the Senate action may be compared with the budget request and the House action reported in this column in the March and April American Forests:

Item	Senate addition
National Forests	
Reforestation & imp.	\$2,290,000
Recreation, pub. use.	1,543,000
Wildlife habitat, mgt.	889,000
Range management	473,000
Range revegetation	345,000
Range improvements	395,000
Soil & water mgt.	988,000
Mineral claims, etc.	1,052,100
Land utiliz. projects	342,000
Protection—fire	1,403,000
Structural improv'mts.	2,134,000
Rehabilitation, burns	1,000,000
Insect, disease contr.	482,000
Research	
Forest & range	1,337,000
Fire, insect, diseases	456,000

Products	745,300
Economics	175,000
Facility construction	1,500,000
Access roads, purchase	1,000,000
State & Private Coop.	1,250,000

Of the Bureau of Land Management increase, \$300,000 is for forest management programs on public domain lands, and \$1,742,500 is for the soil and moisture conservation program.

NATIONAL OUTDOOR RECREATION RESOURCES REVIEW Commission now includes Senator Henry M. Jackson of Washington, who replaces the late Senator Richard L. Neuberger on the commission.

A "FEASIBILITY" STUDY FOR A SAWTOOTH NATIONAL PARK in Idaho has been proposed by Senator Frank Church of Idaho. The area, long familiar to The American Forestry Association's Trail Riders of the Wilderness, would include the present Sawtooth Primitive Area, now in the Sawtooth National Forest, plus some fringe areas to round out the park. In introducing his bill, S. 3353, Senator Church has emphasized that he is seeking at this time only a study of economic and other resources, the probable effects of national park status versus national forest status on the local economy, and whether or not the recreational beauty and use of the area can best be served, in the public interest, by transferring jurisdiction from the Forest Service of the Department of Agriculture to the Park Service of the Department of the Interior. The bill calls for a joint study to be made by Forest Service and Park Service, plus a "contract with a qualified non-federal research institution to study the economic effects of the creation of a national park in such area." Senator Church characterizes the proposed study as a means to "strike a trial balance upon a thorough assessment of all the relevant facts." Oddly enough, of all the so-called "study" proposals advanced to date, the Sawtooth suggestion has resulted in more

(Continued on next page)

WASHINGTON LOOKOUT (Continued)

sparks and bristles from Trail Riders than any to date, AFA reports, although a rumbling of discontent has begun to grow on the part of riders who have had long and friendly relations with Forest Service rangers in other areas affected.

SUPPLEMENTAL APPROPRIATIONS FOR THE CURRENT FISCAL YEAR for forest fire control have been approved by both Senate and House. These, actually, are authorizations to the agencies involved to pay their just bills for controlling forest fires on federal lands, and they serve to show the costs of forest fires. For example, the U. S. Forest Service started the current fiscal year with a token appropriation (in fact, just a license to incur fire control expenditures) of \$5 million; actual costs of fire control, however, will run up an additional \$21 million, for which the Congress has approved \$20,450,000. For Bureau of Land Management, an additional \$2.8 million will be needed; Congress allowed \$2,450,000. Bureau of Indian Affairs chalked up a need for \$360,000, and Congress granted \$310,000. Park Service was allowed \$125,000 against a request for \$150,000. The differences between actual costs of fire control and the amounts approved by Congress in the supplemental appropriation will have to be met by the agencies from funds diverted from other activities related to resource management and protection.

CONTINUED STUDY OF THE WILDERNESS BILL

proposal is being made by the Senate Committee on Interior and Insular Affairs, and a new committee print may be developed. Indications are that further hearings may be held in view of the many changes from the original drafts. It is possible that a greatly modified bill will be released by the committee before the Congress adjourns, but passage by either Senate or House is not anticipated.

IN MARKED CONTRAST TO THE KLAMATH INDIAN affair, the termination of federal management of the lands of the Menominee Indian Tribe in Wisconsin is proceeding relatively smoothly. The termination date is December 31 of this year. As a tribe, the Menominees have been operating a successful timber business for a number of years. Under the plan submitted by the tribe to the Department of the Interior, a Menominee Enterprises Corporation will be set up to take title to the forest lands and other properties. The plan also includes the establishment of a local

government under the state of Wisconsin, and the state legislature recently created a new county of the Menominee lands. To help finance the pending enterprise, Wisconsin Representative Laird and Senators Wiley and Proxmire have introduced legislation to provide a loan, not to exceed \$2.5 million, to the tribe (or to the proposed corporation) at not more than four percent interest rate.

A NEW FARM BILL WILL SOON BE A MAJOR ORDER

of business for the Congress. Indications are that the Conservation Reserve phase of the Soil Bank Program will be extended in duration and expanded in acreage goals. A number of proposals have also been made to include farm forestry products under the Agricultural Adjustment Act, thus bringing farm forestry for the first time under government direction and control similar to agricultural crops.

THE MULTIPLE-USE BILL PROBABLY WILL BE

amended by the House Committee on Agriculture as the result of hearings held in February. The measure, to direct the Secretary of Agriculture to manage the national forests for sustained yield and for multiple-use purposes, as introduced, would give equal status to outdoor recreation, range, timber, watershed, and wildlife and fish products and services. The bill, at first, appeared to be non-controversial — one of those which would elicit much support, but practically no opposition. Opposition to the "equal status concept" has been so strong, however, from some quarters that the committee is reported as American Forests goes to press to be considering an amendment which will re-emphasize the basic purposes for which the national forests have been reserved under the act of 1897 — watershed protection and timber production.

AT THE SAME TIME, AFA REPORTED THAT

warning signals were also beginning to go up from some of its members on reports that opposition was developing from certain of the wood industries on what they regard as a creditable effort by the Forest Service to give all uses on the national forests a "fair shake," including recreational use . . . which effort, they say, would merely give statutory approval to what the Forest Service has been actually doing for a long time. These members want to see the Forest Service and the industries involved work out their differences in the public interest and in some cases are asking who specifically is resorting to "obstructionist" tactics.

Editorial

Men Who Grow the World's Trees

Upwards of 2,000 foresters from 50 foreign countries will assemble on the University of Washington campus in Seattle from August 20 to September 10 for the only World Forestry Congress most Americans living today will know in their lifetimes. These visitors to our shores will be the men who grow the world's trees, many of them internationally famous for their contributions to science, and on their shoulders rests the awesome responsibility of seeing to it that the world's tree wealth does not become bankrupt and that the woods needs of generations yet unborn are provided for. It is considered appropriate, therefore, that an international tree planting ceremony is being planned at the congress and that commemorative postage stamps will be issued both by the United States and by the United Nations.

The Fifth World Forestry Congress, the first ever held in the Western Hemisphere, brings honor both to America and to American forestry. In giving visitors the red carpet treatment, special tours are being arranged in the United States and Alaska. The Department of State will honor the guests with a special reception. Another will be staged by The American Forestry Association and the Society of American Foresters. According to Dr. I. T. Haig, director of the congress, the Seattle meeting will probably be the biggest in history. The first was held in Rome in 1926. Subsequent congresses were held in Budapest, Hungary in 1936; Helsinki, Finland in 1949; and Dehra Dun, India in 1954.

The congress program will cover all major fields of forestry and forest product utilization. Special attention will be given to problems of multiple use of forest lands for the integrated production of timber, forage, water, wildlife, and recreation. The program also calls for a review of the status of world forestry in 1960. In all, 200 papers will be presented at Plenary Sessions and Section meetings. Language barriers will be overcome by simultaneous translations in French, Spanish, and English at all sessions. Assisting in this will be nearly 100 representatives of the State Department alone.

Just who are some of the leaders who will participate in the congress, some AFA members have asked? They include: E. K. Kalela, ecologist, the son of a former Finnish Prime Minister; Amihud Goor, chief forester of Israel and the world's leading authority on semiarid planting; FAO Director General B. R. Sen, of India; Mr. J. D. B. Harrison, Canadian forestry chief; Dr. Eric Hagberg, of Sweden; D. A. N. Cromer, of Australia; Dr. Kreutzinger, of Poland; A. R. Entrican, New Zealand Forest Service chief; Professor Hans Leibundgut of the University of Zurich, Switzerland; Dr. Egon Glesinger, director of FAO's Forestry Division; D. Heindsijk, Dutch expert on tropical forests; Florencio Tamesis, former chief forester for the Philippine Islands; Sir Harry Champion, chairman of the British Empire Forestry Association; and Academician V. N. Sukachev, the distinguished Soviet botanist and editor.

Purpose of the congress is twofold. It seeks to advance the science and practice of forestry through exchanges of information and development of personal associations among the professionals of forestry

throughout the world. It seeks also to stimulate and foster international co-operation in the proper development and use of the world's forest resources.

That the congress is important in the dissemination of forestry knowledge and know-how is self-evident. But it is even more than that. As all-out State Department participation shows, the congress is also considered a cultural and scientific forum for the purpose of bolstering the cause of international communications and understanding.

And right here would seem to be an appropriate place to give an accolade to approximately 50 American foresters who have pioneered in promoting forestry overseas, especially in under-developed countries since World War II. Two American foresters who did yeoman work in helping to set this program up were former Forest Service Chief Lyle C. Watts and Tom Gill, of the Pack Forestry Foundation (see article on page 20). Since that time, the grateful people of Formosa have erected a monument to ICA forester Paul Zehngraff. Paul Bedard, also of ICA left the Philippines with more friends than anyone since General Douglas MacArthur. South American foresters will long remember Hugh Curran, the "grand old man of tropical forestry." One also thinks of Fred Shelley in Korea, grinning when native children fondly called him "Babe Ruth," and of many, many more.

Now, there are still those who downgrade this foreign forestry effort and call it pouring money down a rat hole, although they are not as vocal as previously. But only recently, for example, a U. S. senator, stating that foreign expenditures are disproportionately large as compared to appropriations at home, made quite a thing of the fact that a million and a half dollars were spent for foreign forestry in 1959 and a total of 10 million plus spent for such work since 1955.

On the other hand, the late Randolph Pack predicted some years ago that every dollar spent abroad for forestry work would pay off in compound interest in years to come in terms of increased investment of American capital abroad and in increased good will. We believe that Mr. Pack was something of a prophet on both counts, for American business capital, including pulp and paper capital, is going into underdeveloped nations on an increasing scale, and American foresters abroad are helping to pave the way for such ventures.

Even more important is the fact that American foresters overseas are making good friends for our country, especially in those cases where they have learned the language. In *The Ugly American* the truth was driven home that our representatives abroad who make the best impressions are those who learn the language, get out and work with their hands, and live without pretension in the manner to which they were accustomed to living at home. Our foresters abroad, judging by the reports, qualify highly when judged by this yardstick. Moreover, in trees they are working with a fine symbol that is internationally loved and respected. It was not by accident that a South American official told us several years ago that "in our country, your foresters are known as 'the friendly ones.'"

on the Art of Touring

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MICHAEL FROME is an authority and writer on travel in America. For 10 years he was travel editor for the American Automobile Association. He has served on the board of directors of the National Association of Travel Organizations, and currently heads the southeastern chapter of the Society of American Travel Writers. He was an official U. S. delegate in 1956 to the Inter-American Travel Congress in Costa Rica. Mr. Frome's most recent book, *Better Vacations For Your Money*, is currently a Doubleday Book Club selection.

By MICHAEL FROME

DURING the months ahead, millions of Americans will journey forth on their annual vacation trips, exploring the magic world of leisure and mobility. They will cover every conceivable corner of the country and the world, and a few inconceivable corners besides. Some will achieve the vacation of a lifetime, while others return only with a case of poison ivy, sunburn, or disappointment.

If there is a single essential element in a successful vacation, it is planning. And now is none too soon to start your summer planning in earnest, especially, if you have a budget vacation in mind. The more effort you invest, the greater your dividends will be. The "secrets" in travel enjoyment and saving lie in the preparations you make early, as opposed to spur-of-the-moment decisions.

Now is also the time to consider travel as an art worth acquiring—as a process of perception, learning, and understanding along with relaxation and change of pace. Master the art and you will have a deeper, richer experience in going places. This applies whether you cover thousands of miles or park at a mountainside or seashore cottage and refuse to budge; you can still absorb something of the surrounding world of nature and history, developing interests that last throughout the year and not merely over the period you spend away from home.

With the art of travel, your vacation becomes an expression of refined taste. The amount of money you spend is of secondary consequence, for some of the best trips are low in cost, and free of artificiality, ostentation, and the mere collection of conversation pieces. That

is why young people—the cyclers, tent pitchers, youth hostellers, undemanding of comfort and convenience but willing to make their own wherever they find it, and looking at the world with learning eyes—are the best travelers of all. If you have a teen-ager or collegian in your home, let him or her plan your summer family trip and the chances are you will be glad of it.

Start with maps and literature. Obtain booklets published by federal agencies (like the National Park Service, U. S. Forest Service, and the Fish and Wildlife Service) and by the states. Many states, and local chambers of commerce, too, recognize that tourist travel is just as important an industry as manufacturing or merchandising and provide helpful, practical literature with a minimum of slanted propaganda.

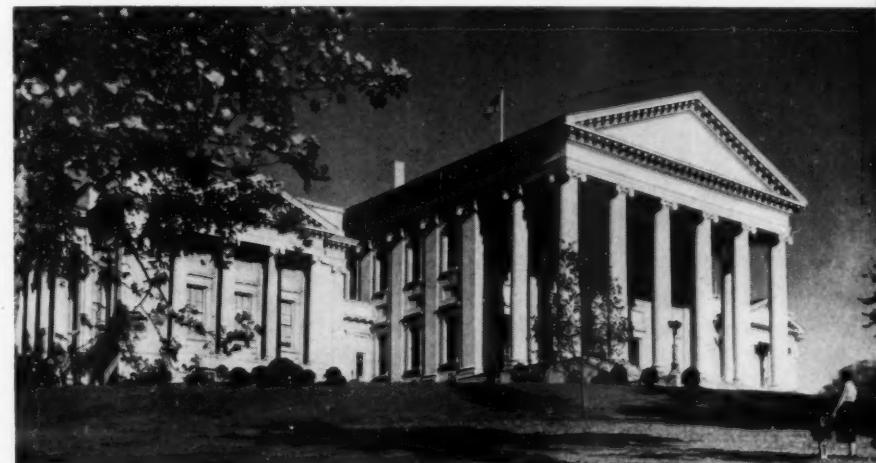
Individual state maps are available through your local filling station, or you can write the major oil companies for an entire free tour kit with marked maps and booklets. These maps are reissued and updated yearly. Few travelers really

take time to become familiar with maps and the story they tell. Spend a few minutes reading the legends so you will understand the differences in types of roads—expressways, parkways, primary, secondary, paved, or gravel-surfaced, for often the straightest line is not the shortest distance between two points. Many maps also show the location of camping areas, parks, forests, and points of interest you might overlook.

Pay special attention on the maps, and in your travel planning generally, to the location of public lands, the national parks, national forests, state parks, wildlife refuges, reclamation areas, and TVA lakes, for they provide the finest opportunities for vacationing today, either as places to stay or to visit from adjacent tourist centers. In one sense they are playgrounds, although pleasantly free of the neon and billboard plague and the honkytonk atmosphere pervading many once-fine communities. These public areas also enable Americans to capture the sense of beauty, the drama of history, and the creative power inherent in their own land. In this era of year-round social conformity, the parks, forests, and other outdoor areas are the best possible places for one to loosen the grip and rediscover himself.

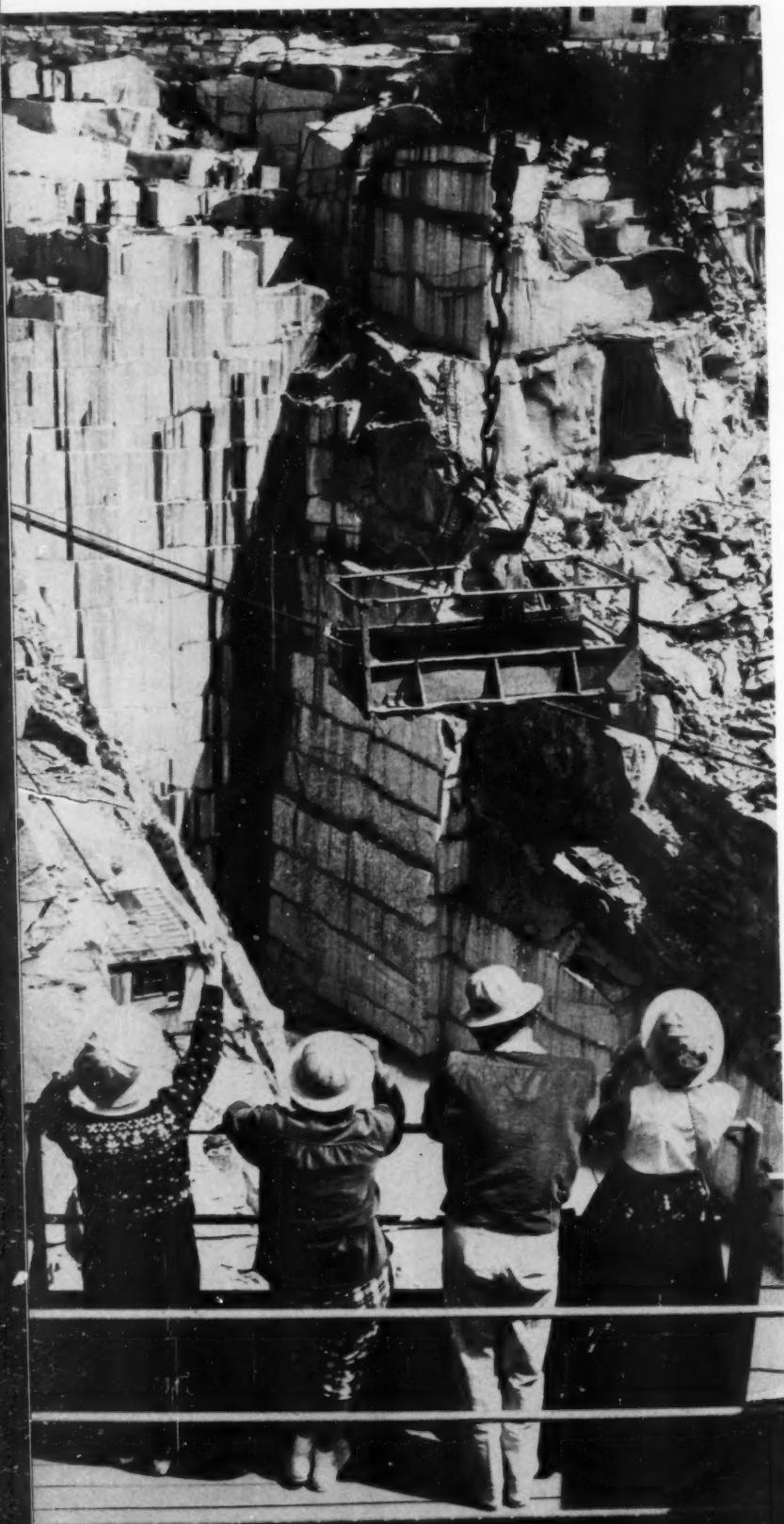
In charting your itinerary, consider some of the lesser-known and new developments, which add the touch of exploration to touring and enable you to enjoy uncrowded corners. One such place is Palisades Reservoir, in Targhee National Forest, Idaho, a 21-mile-long mountain lake formed behind the world's largest earthfill dam just

Thomas Jefferson patterned Virginia's capitol after Maison Carree at Nimes, France.



Scenic highways, such as Blue Ridge Parkway, enhance traveling pleasure.

The world's largest granite quarry, Rock of Ages at Graniteville, Vermont, is one of hundreds of interesting business operations open to the public.



below the Grand Canyon of the Snake River, with excellent boating, fishing, and shoreline camping. In Arizona, the \$300 million Glen Canyon Dam will not be complete until 1963, but even in construction the mighty dam and bridge across the Colorado River—the highest (700 feet) and second longest (1270 feet) arched span in the country—are tourist attractions in their own right, part of the wonders of the Arizona-Utah desert. In New Mexico, the great ruins of Chaco Canyon National Monument, considered the most important prehistoric archaeological site of the Southwest and inaccessible for many years except through arduous travel, has benefited from road improvement and a new visitor center. For a real outdoor vacation adventure with good company, a pack trip with the Trail Riders of the Wilderness, sponsored by The American Forestry Association, is hard to match. On one of these trips a sense of humor is more important than riding ability—although you are sure to return with your fair share of both.

But even in the more popular, heavily visited areas, plan to get off the beaten path and away from people, at least for a little while. Not that there's anything essentially wrong with people, but you can see them any time and any place. When you visit Yellowstone, for example, bear in mind that the developed Loop, clogged with about 15,000 visitors daily, covers only a fraction of the nation's oldest and largest national park. Even by car, you can follow the pleasant old Tower Fall Road through relatively untrampled countryside to superb wilderness scenery and campgrounds, and by foot or horseback follow well-marked trails through unspoiled and unlittered country. The same is true of Yosemite, where the immense summer tide of humanity floods the valley floor. Here you should take to the high country, which many visitors never realize exists as part of the park. Scheduled pack trips follow the High Sierra Loop to mountain lakes and passes as high as 10,000 feet. And by car you can drive from Tuolumne Meadows to Tioga Pass or Tenaya Lake, then explore afoot among fields of glacial boulders, granite domes, and small lakes.

In the East, too many visitors to the Great Smoky Mountains satisfy

themselves with driving the trans-mountain road and viewing the scenery from Newfound Gap or Clingman's Dome, although the most rewarding experiences are found along the trails which lead past streams, waterfalls, and giants of the forest. The panoramic view is fine anywhere as a mere introduction, a surface-scratcher, but for an intimate, personalized experience, one that will last longer, get off the paved overlook and onto the wooded trails.

Plan your time wisely so you can "afford" such expeditions. Time is the obsession of the inexpert tourist, who calculates that in one day he can travel through six states, two national forests, and three national monuments. They become part of his collection of places—not that he has enjoyed, understood, or even seen, but simply that he has passed through. In one sense, this is wholly defensible; after all, when the average American family swings West it may be for that once-in-a-lifetime trip, the big chance to see everything in one fell swoop. On the other hand, in this leisured age, the same family should look forward to more, not less, opportunity to get out and cover the country. Travel should be planned not on a one-season basis, but over a period of years, with each trip doing justice to its destination.

Pre-trip reading helps. It develops a reason and motive for going places. Many fine articles in AMERICAN FORESTS and other periodicals cover new and old regions worth visiting. Follow them up with your own special interest, whether it is botany, gun collecting, history, the Civil War, or what have you. If you have

no hobby or special interest, travel can help you develop one: perhaps in following the trail of Lewis and Clark to the Pacific, or in collecting a typical gemstone in every state you visit. You will find yourself doing more reading, before and after your travels, and each time you set out from home you will know *why*, as well as where, you are heading.

How far should you plan to travel in the course of a vacation trip? By car, you can figure this summer on covering about one-fourth more miles than you did five years ago, even more on the unbroken expressway network between New York and Chicago. Highways this year are greatly improved. Wherever you travel, you are likely to drive over sections of the emerging National System of Interstate Highways. Eventually, this \$40 billion expressway system will cover 41,000 miles. Already more than 7,000 miles have been completed; with other express routes, superhighway mileage totals about 11,000 miles.

Modern expressways are characterized by gentle curves and grades, longer sight distances, wider lanes. Landscaping and roadside rests serve to break the monotony of endless concrete ribbons. As a result of design and engineering advancements, you can cover long distances faster—and with less fatigue or exposure to accident.

But use the superhighways, instead of letting them use you. Drive them to get someplace worth visiting and not just to burn up speed on the road. Limit your driving to a maximum of eight or nine hours a day. If you are not in a hurry, consider traveling the by-roads, rather than the high roads. You

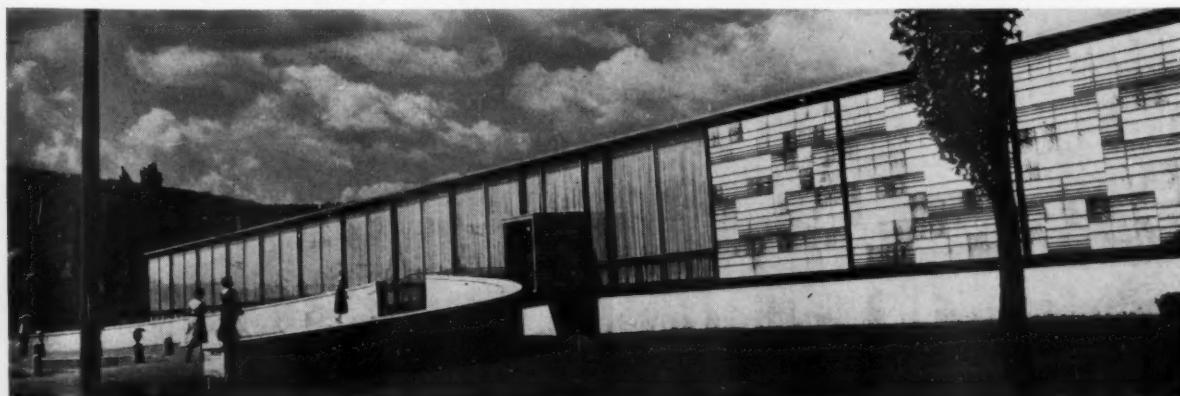
could spend a full vacation absorbing the Blue Ridge Parkway and its environs in Virginia and North Carolina. The parkway will be completed, in June, for 115 unbroken miles from Rockfish Gap at Waynesboro, where it joins the Skyline Drive, south to Roanoke. From here, the parkway, still under construction in some sections but linked by state roads, continues to Asheville, North Carolina, and the Great Smokies. In terms of motoring it represents a new concept, designed for leisurely touring without commercial traffic or billboards. Instead, there are parking overlooks for observing wide valleys and clusters of mountains, and recreation areas with picnic grounds, campgrounds, and nature trails.

How far you travel also depends on how much money you have in your vacation budget, so you should try to estimate total costs in advance. Start with your car expenses. With new gas taxes, you can expect to spend an average of four cents a mile for gas and oil, or \$40 for a thousand-mile trip.

For a family of four, food will probably be the largest single expense. If you go camping, or stay in a cabin, food costs will be about what they are at home, \$25 to \$35 a week. If you stay at motels and eat all your meals at restaurants, the cost will be about \$5 per person a day (breakfast \$1, lunch \$1.50, dinner \$2.50). This amounts to \$35 a week per person, or \$140 for a family of four. Then there is the compromise: a low-cost picnic lunch on a touring vacation, or an occasional restaurant meal while you are camping. Highways are dotted

(Turn to page 42)

Corning Glass Center, Corning, New York, dedicated to the history, art, and science of glassmaking, is open to the public. Visitors may tour Museum of Glass, Hall of Science and Industry, and Steuben Factory.





Air National Guard (Alaska) cooperated with BLM by supplying C-47 and flight crews to haul supplies, equipment to fire areas

All but one of the 16-member smokejumping team were available for this photo. The team was brought into action last June



At drop area jumpers leave plane in 3-man passes from altitude of 1200 feet

Over one million acres are burned annually, despite improved fire protection



THE midnight sun bounced flame-like reflections off the wings of a C-47 as it began to circle a cloud of smoke rising from a rapidly spreading forest fire in arctic Alaska. Suddenly, three white-clad men bailed out of the airplane's open door. As their orange and white parachute canopies snapped open, a new era in Alaska fire fighting was born.

The men are part of the first unit of 16 smokejumpers brought into action in June, 1959 by the Bureau of Land Management, U. S. Department of the Interior, in Alaska.

The fire was located 200 miles from the nearest road, 20 miles from the nearest lake, and 300 miles from BLM fire headquarters in Fairbanks. This time it was put out in a few hours. Before the smokejumpers arrived on the Alaska scene it would have taken days, perhaps even weeks, to get to and put out a fire so remotely located.

Smokejumpers have been used for 20 years in many forest regions of the other western states, and their

worth has been well established. The problem this first year in Alaska was not to prove need—but rather to find out what new fire-fighting methods could be developed and how best to fit a jumper force into the existing fire-fighting organization.

Alaska's 225 million acres of forest and range land have been under protection from fire by the Bureau of Land Management since 1940. The annual acreage burned has been greatly reduced, but the average for a 20-year period is still over one million acres annually. A million acres is equal to a strip of land one mile wide from Washington, D. C. to Denver, Colorado. No state can sustain such drastic losses to its natural resources. These losses are particularly burdensome to a new state confronted with the various problems of financing its first years and encouraging the necessary capital to invest in its resources. It is obvious that widespread destruction by fire can ruin any industrial development, and that utilization of

Alaska's resources is totally dependent upon adequate protection from fire.

A critical problem in the new state of Alaska is lack of roads. In an area approximately one-fifth the size of the other 49 states there are only 5,000 miles of road. While most of the man-caused fires are in the areas opened by roads, it is sometimes amazing to learn that Alaska's annual burned acreage is largely the result of lightning fires which comprise 28 per cent of the occurrence but 78 per cent of the lost acreage.

A late fire season provided the new jumpers with an opportunity to get their gear ready and make a few practice jumps. Also, an idea of Alaska fire behavior was gained when the men assisted in several walk-in fires being handled by the regular fire personnel. A C-47 loaned to BLM by the U. S. Fish and Wildlife Service arrived on June 1 and was immediately converted for

By HANS W. TRANKLE
Smokejumper Squadleader, BLM

SKIPPING UNDER THE MIDNIGHT SUN



jumper use by taking off the door and installing a static line.

Then, all hell broke loose!

During the first week of June the men made seven consecutive jumps before receiving a break. Some of the men were on four fires that week. Lack of sleep, continuous physical strain, heat and smoke exposure, and clouds of mosquitoes provided a brutal initiation for Alaska's first smokejumpers.

It was found that the ground cover of moss and grass was often so thick that it was extremely difficult and sometimes impossible to reach mineral soil; therefore, most of the fires were controlled with water pumps, either of the back pack or power variety. Water was not a problem because in the muskeg country potholes containing water are nearly as numerous as the mosquitoes which they breed.

The moss and grass cover does have one big advantage. It provides a soft landing cushion. More than once the jumpers were thankful for that cushion. One man had a chute malfunction and barely managed to pull his reserve at 500 feet. In another instance three jumpers left the plane during a routine pass, but two chutes opened with the men facing each other. Coming together at a forward speed of 8 to 12 miles per hour, the two jumpers had no time to work guide lines before tangling and had to go down together. No one was injured in either case — thanks to Nature's arctic cushion.

The fire control organization in Alaska is too small to handle even "normal" fire seasons. That fact,

After a fire is reported it usually takes less than 30 minutes to get airborne. Since speed is important in fire suppression no time is lost getting underway.



Smokejumper prepares for action. His complete outfit weighs about 40 pounds.

combined with Alaska's large size, lack of roads, long fire season, and generally rapid rate of fire spread have forced the fire control men to think in terms of air operations for all phases of the work.

To offset the matter of distance and time, BLM uses a World War II fighter plane (a P-51), called the "Pink Lady," for rapid aerial detection of fires.

After the fires are located, aerial tankers (a TBM, F7F, and B-25) carrying borate chemicals make initial bombing attacks. These bombing attacks cool the fire down and limit its spread. Next, the jumpers

are dropped in. Then, if needed, the tankers make second runs after the jumpers are on the fire line. In some cases the tankers or the smokejumpers can handle the fires alone, but on the larger fires the 1-2-3 technique of borate first, then jumpers, and then borate again has proven to be the fastest and cheapest method of fire suppression.

Between fires, the smokejumpers spend most of their time making up fire packs, rigging parachutes, and cargoing pumps, power saws, and other equipment to be dropped with them from the airplane. All packing of parachutes is done by qualified riggers who are especially trained for the job and hold C.A.A. licenses.

A complete smokejumper outfit weighs about 40 pounds and includes the parachute and harness, a high-collared padded jacket, padded pants, a football helmet with face masks, gloves, and logger-type boots. A 100-foot letdown rope is carried in a "jump pocket" located in the right leg of the padded pants. In case of a hang-up the jumper uses the rope to lower himself to the ground.

Speed is very important in fire suppression, and once a fire is detected and located there is no lost time in getting underway. Usually it takes less than 30 minutes to get airborne after a fire is reported.

Upon arrival in the fire vicinity a spotter selects a drop area. The jumpers then leave the plane in three-man passes from an altitude of 1,200 feet. Their rate of descent varies from 18 to 32 feet per second depending on the air density, porosity of parachute canopy material, and weight of the individual jumper. Before coming in for a landing the jumper places his feet together and, upon impact, flexes his knees slightly and goes into a roll to absorb the shock. If a safe landing is made the plane is signaled by two orange streamers laid out in the shape of an "L."

Float planes and helicopters are used to pick up the smokejumpers and their gear and, if necessary, to bring in reinforcements.

The "C" ration is the standard food on the Alaska fire line—supplemented by fresh food every three days in the case of regular fire crews. The country is so much a frontier that if the rations become depleted, it may become difficult for the crew to obtain food. However, we found in a few instances that fires did burn

(Turn to page 48)

CHASING THE RAINBOW

By JOE LONG
and SID DE LOACH

HERE was a sign painted upon a huge redwood slab which said, "Rainbows available — Bring your own pot of gold!" But Sid was never quite sure just where he had seen this unusual sign. He knew that it was somewhere in Oregon—that he had seen it many years ago while enroute by canoe to a lumberjack job in the Rogue River district. He remembers a road which followed the Rogue up through the Cascades.

He also recalls that it was the month of June when he came upon the sign and decided to pause in the interim of lumberjacking jobs. He had no gold, but he did fish one of the Rogue tributaries—and caught the rainbows by their tails, they were so plentiful.

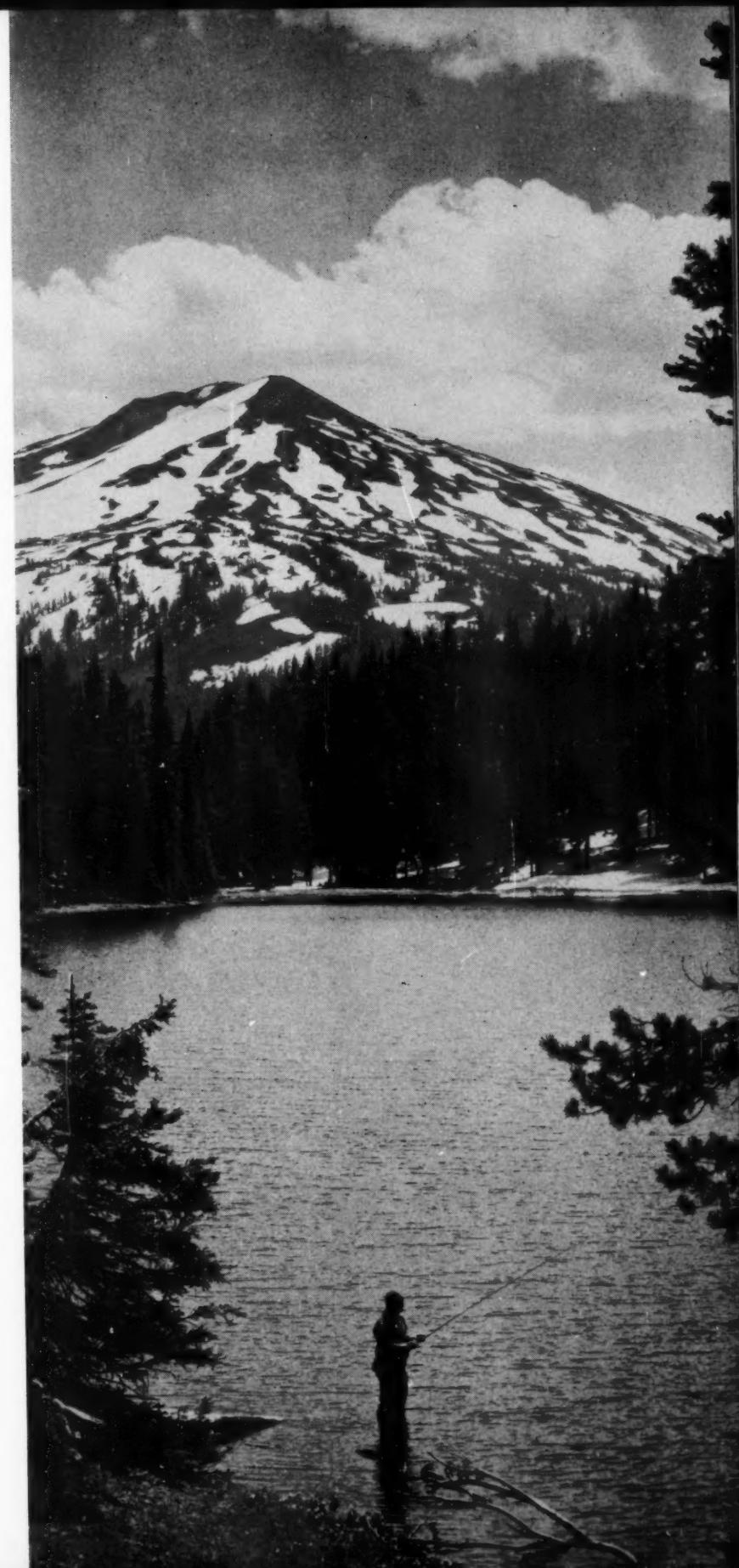
"For thirty years," he told me this last spring, "I have wanted to go and find that rainbow sign, but I can never quite seem to make it. And now, I suppose, it's gotten to be a kind of obsession—I've just got to go back to that beautiful spot." There was a kind of nostalgia in his eye. "I guess, Joe, you know what I mean—it's one of those must-do things, I suppose."

"Sure, Sid—I know what you mean," I said. "I guess every fisherman has a spot in the back of his mind that he's always going to revisit. Why not go? It would only take a few days—at most a week." This was back in the late spring.

Several months later, after collecting our gear, we flew via the "rainbow route" to Klamath Falls, where

(Turn to page 46)

Todd Lake, accessible from North Century Drive, west of Bend, Ore., is a favorite trout fishing spot.





Dr. Rittenhouse provided funds for carob orchard to operate for thirty years.

IN that western wonderland called Southern California, two dynamic senior citizens are successfully proving the incredible abilities of the treasure-laden carob tree. The long-overlooked talents of this California resident read like an excerpt from Ripley's Believe-It-Or-Not: it offers diversified products for American markets, a strong helping hand to the nation's struggling soil-conservation program, and a valuable yet easily-grown crop to supplement the Golden State's agricultural economy.

Do all these qualities sound improbable? Dr. Walter Rittenhouse, M.D., and Dr. J. Eliot Coit, Ph.D., agree that the carob does sound too good to be true, but after years of probing this strange tree's potentials, they realize that it is truly one of Mother Nature's masterpieces.

Eleven years ago, these future-minded doctors launched their carob crusade with an eye toward fighting erosion and introducing a promising crop to non-irrigated California acreage. Deep in the sunburned hills of San Diego County they began keeping close tabs on America's first carob demonstration orchard—with the University of California,

the Soil Conservation Service, and the Department of Agriculture watching attentively from the side lines. Today, the "carob doctors" have earned the co-operation of all these spectators, and their ambitious project boasts 225 leathery-leaved trees, bearing increasing crops of edible brown pods.

Dr. Coit, recognized as an American carob authority, says emphatically, "There is no doubt the need is here for select, orchard-grown carobs, and California farmers have land that stands to benefit from their culture." At present, the United States is forced to rely on Mediterranean countries for some 17,000,000 pounds of carob pods and their by-products used annually in a multitude of American commodities, including a delectable mock-chocolate candy and a highly effective pharmaceutical.

The timeless carob has long been cultivated in areas bordering the Mediterranean Sea and the Near East, and it is believed to have supplied a principal food in the Garden of Eden. An evergreen member of the legume family, the carob produces a chewy, lima-bean-shaped

THE CAROB CRUSADE

By M. D. LOGAN



The talented carob pod serves many industries, including food processors and pharmaceutical houses. Varieties from left, Sante Fe, Bolser, and Sfax.

pod or fruit, endowed with a distinctive, honey-date-chocolate flavor. Through the ages, both Europeans and their livestock have relished these energy-packed pods, now known to contain six per cent protein and over 40 per cent natural sugar. While engrossed in carob research, Dr. Rittenhouse found that as late as World War II the rural population of southern Greece lived largely on carob pods after the German army appropriated other food and livestock.

Historians find that the carob (*Ceratonia siliqua*) has been known by more aliases than a well-seasoned criminal. The popular name, "St. John's Bread," stems from the belief that John the Baptist subsisted on this fruit during his extended stay in the wilderness, while the pods were called "husks" in the Biblical parable of the prodigal son. The Israelites first used the name "Boecksur," or "God's Bread"; Mohammed's conquering armies fed on the pods and knew them as "Kharub"; the Romans used the word "Carobi," and in the Spanish Peninsula "Algeroba" was a broad reference covering carobs and their near

relatives, such as mesquite.

For America's "sweet tooth" today, the seeded pods are processed into a beige powder which capably substitutes for chocolate or cocoa in baking or making candy. Carob powder is not only highly nutritious and easily digested, but is agreeable to most people allergic to chocolate. Since 1951, one of the chief sources of this powder in the United States has been an Alhambra, California, milling company. Over 100 tons of choice, imported pods are milled here yearly. This "stand-in" for chocolate is sold to the wholesale and retail trade, and is also used as an ingredient in their own crispy, oatmeal-like carob cookies and a melt-in-your-mouth candy bar reminiscent of milk chocolate. During the past year, the popularity of all these goods has resulted in their being stocked not only by health food stores, but by many Los Angeles supermarkets.

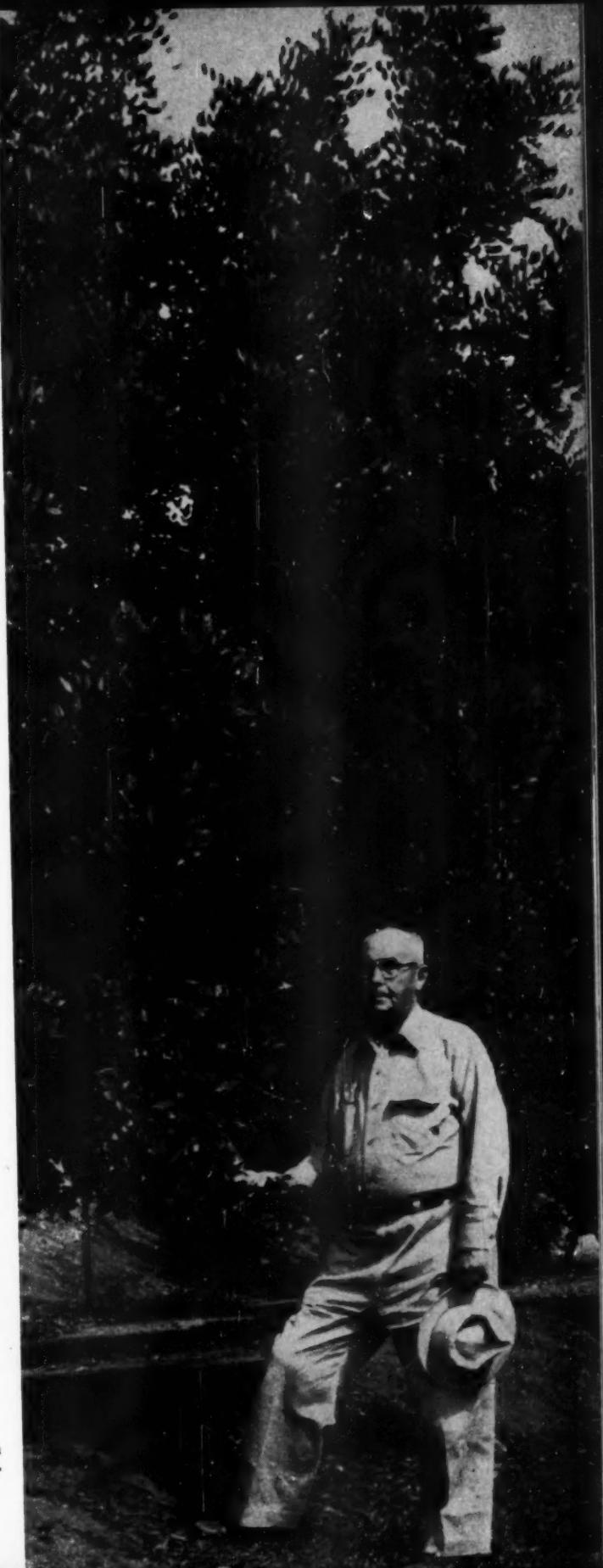
Since available Mediterranean carobs fluctuate in both quality and quantity from shipment to shipment, West Coast food processors would welcome an assured supply of better and perhaps cheaper domestic pods. "When select, California carobs begin bearing commercial crops, their sugar-rich pods will find a limitless future in American kitchens," vows Dr. Rittenhouse, a retired physician and nutrition specialist.

Wonders seem never to cease where the carob is concerned. The seemingly insignificant seeds, which make up 10 per cent of each pod's total weight, are a marvel in themselves. Legends say that the carob seed was the original carat weight of ancient goldsmiths. Next, the seeds were used in the making of cherished brown rosaries. Modern Europeans continue to find unusual jobs for these willing seeds. The tiny, protein-rich seed embryo is added to poultry food, while the largest part of each tough, lentil-sized seed is used to concoct a vital, sticky gum called "tragasol."

The United States is a ready customer for this multi-purpose gum, importing about 15,000,000 pounds a year. Tragasol serves our food industry as a stabilizer in many palate pleasers including ice creams, salad dressings, sausages, hot dogs, cheese

(Turn to page 63)

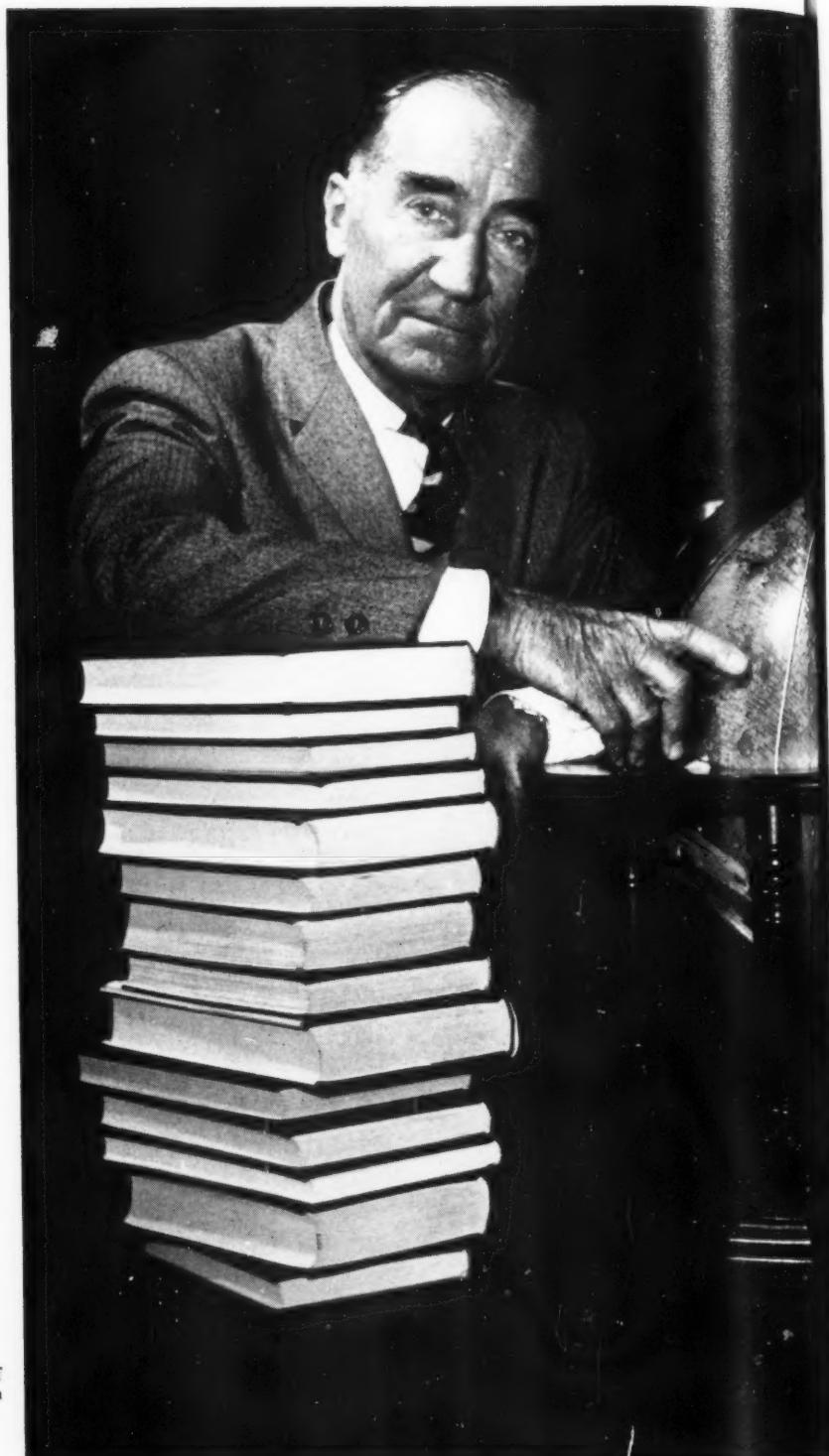
Dr. Coit, a top authority on American carob culture, supervises the 225 trees.



FORESTRY'S AMBASSADOR WITHOUT PORTFOLIO

By JAMES B. CRAIG

**Tom Gill, executive director of
the Pack Forestry Foundation**



AMERICAN FORESTS

ADVENTURE has been the constant companion of world forester Tom Gill, the executive director of the Pack Forestry Foundation, whose career bears witness to the fact that life need not be uninspired and uninteresting for those who are willing to live it to the hilt.

With a World Forestry Congress scheduled in Seattle this August, this seems an ideal time to review the work of forester Gill, one of a small band of 50 Americans who have taken the forest conservation story to many countries since World War II. Of these 50, Gill is perhaps the best known, and it was not by accident that Forest Service Chief McArdle referred to him as "our forestry ambassador without portfolio" when the Pack forester received Mexico's highest decoration for service to that country. And this is only one of many world-wide honors that have been conferred on this much-travelled forester, who has devoted much of his life to "forest and conservation education." Today, Tom Gill is generally regarded as the most accomplished forester in America.

Forest ranger, tropical explorer, flyer in World War I, educator, and author, Gill wrote his first story while snowed in on the summit of the Wyoming Rockies. Since then, he has lived in many out-of-the-way places of the world, from the Equator to the Arctic Circle, and has seen some strange happenings.

"In years of knocking about on several continents, I have been involved in floods, forest fires, snow-blindness, and army ants," Mr. Gill says. "As an innocent bystander, I weathered two untidy revolutions: I've camped in the shadow of Mayan temples and had my train riddled by a covey of lighthearted bandits. I've known the joy of slopping about in a sinking boat, finally to crawl up on shore in the low, pestilential delta of the Orinoco, faced with the cheery task of cutting my way through the jungle with a machete. Most of that trip we lived on a strictly reducing diet of crocodile tails and iguana eggs in various stages of ripeness. And if you've never eaten

an iguana egg dug from the steaming delta sands, you don't know the meaning of the word 'racy' as applied to food. I've perspired through a long afternoon while a herd of wild pigs dared me to come down from my carefully-selected mahogany tree, and I've slept out in the snows with dog-teams when the thermometer nose-dived to forty below and the northern lights sounded like riffling a deck of cards."

As a flyer in World War I, Tom Gill belonged to those early birds who got their training on the type of planes now remembered as "sewing machines." Later, as a pursuit pilot, he was placed in charge of flying at the largest school of aerial gunnery in the world. The war over, he took a rickety plane down into southern Mexico, where he flew over unexplored country and made the first aerial maps of tropical timberlands. The routine of daily flight over the endless jungle was broken finally by a forced landing, a long way from base, with the subsequent loss of one of his party by a poisoned arrow in an attack by Indians.

Tom Gill's bent for adventure was shaped early in life. Although born in Philadelphia in 1891, his roots were in Texas along the Mexican border. "My father, a former rancher, must have been a tremendously exciting person to my childhood," he recalls. "Rio Grande, Pecos, Billy the Kid, Geronimo—they were names of strong alchemy to me, and my magic carpet was a many-colored serape my father carried in northern Mexico many years ago."

By the time he graduated from the University of Pennsylvania, Gifford Pinchot's colorful forest rangers were already making an appeal to the public imagination, and it is not surprising that Gill went on to Yale, where he received a Master of Forestry degree in 1915.

While in college, Gill tried some fiction and magazine writing. Some of his earlier efforts were published in *Adventure Magazine*, and an article about a coyote finally put him in the slicks. Raphael Sabatini was

doing his famous serial on "Captain Blood" for *Cosmopolitan* about the time that Editor Ray Long of that magazine took the young forester in hand.

Long admired the legitimate western flavor Gill injected into his writings, but he was ruthless in eliminating the young forester's efforts to put across a "conservation message" in his work. "By the time Ray got through with those early stories of mine, the only forestry or conservation that would be left was the log on which the heroine happened to be sitting," Gill ruefully recalls.

While heartless in squelching Gill's early efforts to "educate" the public, it was probably this veteran editor more than anyone else who encouraged Gill to keep writing. The result since has been more than 50 magazine articles and over a dozen novels, all serialized in top-flight magazines, all translated into seven or eight languages, and five made into motion pictures.

When Gill first became an assistant forest ranger in Wyoming in 1915, his first boss was H. N. Wheeler. When the new assistant walked in the door, Wheeler told him, "You're in charge here. I've got a special job to do," and promptly left for other parts. By the time World War I came along, Gill had become a full-fledged forest ranger and had lapped up a lot of valuable story material in such places as Deadwood, South Dakota, where the spirits of Deadwood Dick, Wild Bill Hickok, and Calamity Jane were still very much alive to the young writer.

Following an exciting series of adventures as a pursuit pilot in the war and the South American exploration, Gill settled down briefly as director of educational activities for the Forest Service.

The Pinchot crusade spirit was still strong, Gill recalls, and the men of that very early group were as memorable and diverse a gathering as one is ever likely to meet. One thinks of Wallace Hutchinson, Coert

(Turn to page 41)

Extensive droughts set the stage for forest fires, which when accompanied by strong winds explode into infernos destroying and marring countless trees.



Flood waters tore away this stream bank, exposing the tree's roots. Then during a particularly bad winter the roots froze into a thick layer of ice. Spring came, the ice broke, and the roots tore away.



Woodpeckers often peck large holes in tree trunks. This series of holes, each of which extends into the center of the trunk, makes this section of tree useless for lumber.

When the 1938 hurricane crossed Florida's keys, stately palms were hurled to the ground and left to grow like this!



Perhaps the only thing that trees and people have in common is that they often are victims of circumstance. Just by being innocent by-standers, trees as well as people are frequently hurt and sometimes killed simply because they happen to be at the wrong place at the right time.

By LARRY J. KOPP



Once this oak was a thing of beauty, standing proudly alone and stalwart. Unfortunately, the tree chanced to stand in the path of a lightning bolt.

Victims of Circumstance

Years ago a farmer attached three fence wires to a sapling and later forgot to remove them. Today they are situated in the center of the tree whose trunk is 10" in diameter

As a small tree this birch grew out of the soil. Later the root system outgrew the soil area. This broke up the soil, and the winds and flood waters carried most of the soil away





Staff archeologist gives campfire talks on prehistoric and modern Indians in Mesa Verde amphitheater.

Pre-historic "Shangri-la"

By MORRIS FRADIN

R EACHING like a great green alar into the sky, amid the eerie canyons of southwestern Colorado, looms Mesa Verde. This was the "Shangri-La" of a prehistoric Indian civilization that flourished until 1300 A.D. Then, these peaceful cliff-dwellers disappeared to the south and east, and silence and decay settled over the region.

The entire civilization of the Mesa Verde Indians as hunters, then farmers, and lastly as cliff-dwellers had encompassed 13 centuries in four great periods.

Archeologists term the first period, 1 to 450 A.D., the "Basket Maker Period," because many mummified Indian remains were discovered among large numbers of reed baskets and bags, which had been used for almost every need—even for cooking food!

The second period of the "Modified Basket Makers" lasted until

about 750 A.D. During this time the nomadic Indians did more farming and less hunting. The third era extended until 1100 A.D. The Indians of this "Developmental Pueblo Period" began joining their homes, apartment-house style, into compact villages.

"The Great Pueblo Period," 1100 to 1300 A.D., was a "golden age" marked by large villages, communal living in the cliff dwellings, elaborate ceremonial practices, and superb pottery and jewelry making. This classic period came to a close, due to the combination of warlike Apache and Ute harassment and a 24-year drought. Pitted hopelessly against both human and superhuman odds, the gentle Indians gradually abandoned their craggy cities. They migrated chiefly to the regions of present-day Arizona and New Mexico and mingled with other Indians until they finally lost their

identity as Mesa Verde people.

In 1874 cowboys discovered the ruins of their civilization, and in 1906 the National Park Service established Mesa Verde National Park as one of its most unique preserves. Now thousands of tourists and photographers each year clamber over the ruined cliff dwellings, hidden among gnarled, weather-beaten, and twisted spruce and pinon trees and scraggly bushes.

The park is only a day's drive from Denver, Salt Lake City, the Grand Canyon, or Santa Fe, New Mexico. Cross-country tourists, traveling east or west on Highway 66, can head north from Gallup, New Mexico. About four hours' drive should bring them to Mancos, Colorado, on Route 160. Here, at the entrance to the park, we pay the ranger \$1.00 for a 10-day permit and begin our tour of the mystic mountaintop.



Examples of pottery used by the prehistoric cliff-dwellers of Mesa Verde

Nineteen miles of driving gingerly along canyon edges, winding ever upward from Mancos on hairpin turns, brings the motorist up the "Knife Edge" road to Mesa Verde, the "Green Table," where an ancient Indian civilization ended 200 years before Columbus discovered America.

Navajo Indian road crews are noted working along the highways. They come from a nearby reservation and are often employed by the National Park Service for all sorts of work in the area. Queasy motorists sneak a breathtaking glance at the vast scenery—and empty space—below, and wish the Indians would install guardrails, wire ropes—even rocks—along the outer edges of the narrow roads.

Arriving atop the mesa, campers head for the Plaza Area, among piñon pines near the cliffside. Soon, the campsite is established, the tent

pitched, and the air mattresses pumped up and draped with sleeping bags. Then the logs are set afire in the fireplace and the tarp is hoisted into place over the picnic table and seats, to protect the food-stuffs and cooking gear against any sudden mountain showers. We are at home on the mesa. . . .

Toward late afternoon cars start cruising through the campgrounds for sites that are fast filling up. Casually, then intently, we sit by our "hearthstone" ticking off the different state tags. There are the numerous ones from California, Arizona, New Mexico, Colorado, Utah, and Wyoming. But there is a sprinkling from Pennsylvania, New York, New Jersey—and we're getting close to home now—from West Virginia, Virginia, and the District of Columbia.

The latter excite our interest, since we're Marylanders living near

the nation's capital. We saunter over to strike up a conversation as soon as they park their car nearby. We offer to lend a hand, and exchange some helpful information in the easy and affable camaraderie which is the stamp of good campers.

Like ourselves, the campers make good use of the excellent camp facilities at which oldtime rough-and-ready campers would have turned up their noses. For instance, a handsome new trailer divided into two sections for the sexes provides modern sanitary facilities comparable to that of a fine motel—and out in the wilderness, too! In several other camping areas are older buildings, housing clean toilet rooms, hot showers, and laundry rooms. Fresh drinking and cooking water is available everywhere. And a nearby general store provides groceries, meats, vegetables, bakery

(Turn to page 55)

Cliff Palace is largest of all dwellings. Two cowboys looking for strays in 1874 came upon this palace and discovered the first of a series of strange, silent cities of prehistoric Pueblos





Remains of upper locks of old Potowmack Canal which were walled with blocks of red sandstone quarried at Seneca several miles upstream



The Potomac flows through acres of wild land, rough and hilly, punctuated with rock formations, and laced by small watercourses

Saved from the path of the bulldozers, the 887-acre tract at Great Falls of the Potomac is now being reserved for public use. Long recognized as one of America's great scenic wonders, the threat to this magnificent area has been eliminated by the creation of the Great Falls Park

By CHARLES EDGAR RANDALL

NEW PARK AT GREAT

WITHIN 15 miles of the nation's capital you can find an area as wild as any you might discover in a thousand miles of travel. You can find an unspoiled square mile of great botanical and geological interest; a place of spectacular beauty.

All this is to be found at the Great Falls of the Potomac. For several years this outstanding area on the Virginia shore of one of our most historic rivers has been threatened with invasion by "developers" with bulldozers. Now, through action of the National Park Service, maintenance of an 887-acre tract at Great Falls for public use and enjoyment is assured. On March 22, the Secretary of the Interior signed an agreement with the Potomac Electric Power Company, owners of the property, which brought the tract into the national park system on a 50-year lease, with an option to purchase the land if Congress so authorizes.

The Great Falls property will be administered as a recreation area and nature preserve by National Capital Parks, the division of the Interior Department's National Park Service that administers other federal parks in and around the District of Columbia.

Far and wide, folks who have visited the Great Falls of the Potomac will rejoice at this action. Those who, like myself, are close neighbors

and long-time acquaintances of the falls are doubly happy.

At Great Falls, the Potomac River tumbles millions of gallons of water daily over rocks two billion years old. The turbid waters are churned to white foam as they cascade over giant boulders or funnel through narrow passages between the rocks. Below the falls, the river races for more than a mile through a gorge carved deep in solid rock.

Where the river widens at the mouth of the gorge, a Virginia stream called Difficult Run empties into the Potomac. Difficult Run, small but turbulent, was so named, it is said, because it was difficult to get across. At its lower end it still is. In its last mile before it joins the Potomac, it has cut a ragged canyon that is as wild as any that might be found in the mountains to the west. Here the waters descend in a mile-long succession of little falls and cascades. Between the cascades they swirl in rock-walled pools, or slip swiftly along stone-lined channels.

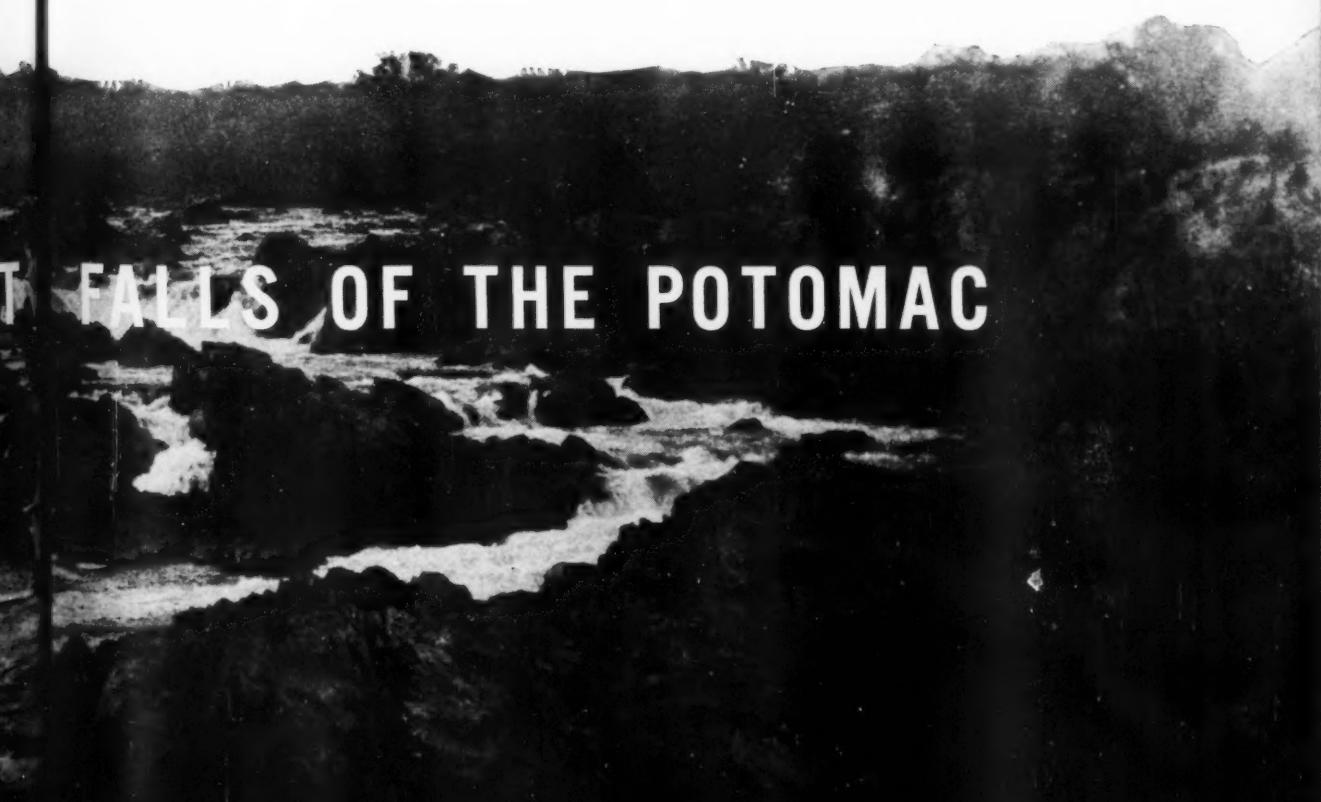
Between Difficult Run and the Great Falls lie several hundred acres of wild land, rough and hilly, punctuated with numerous rock formations, laced by a number of small watercourses, and covered with a varied forest growth. This is the area embraced in the new park. The tract also extends up-river a short distance above the falls to a

small dam built years ago to feed water to one of Washington's reservoirs. Inland from the river, the park area extends in some places to State Route 193. South of Difficult Run it is adjoined by the extensive grounds of the Madeira School, parts of which have been kept as natural woodland.

The Great Falls-Difficult Run area is of special interest to the geologist, the botanist, the ecologist. Teachers at the schools and colleges in the Washington area frequently bring their classes here for first-hand observations in this natural outdoor museum. They see where the Potomac gorge cuts through pre-Cambrian rock, the roots of mountains that were once higher than the tallest peaks of the Rockies. At Great Falls the dominant rocks are ancient schists, once the sediment at the bottom of an ocean, sedimentary strata that later were compressed and folded in tortured convolutions through successive periods of mountain building. Intrusions of granite were squeezed up in some places as molten rock from the interior of the earth. You can see the evidences of extreme pressures in the gneisses, schists, and slates.

The effects of water on rock are everywhere evident. The gorge itself was cut through from 40 to more than 100 feet of solid rock. Jagged

(Turn to page 39)





Authoress Pearl Buck has distinction
of being Vermont Tree Farmer No. 53

Tree Farming Sweeps the Country

By ED KERR

F. Norman Gallaspy is Louisiana's 1000th certified Tree Farmer



PARDON me, sir, but you swing
a mean pruning blade. How long
have you been a woodsman?"

"Oh, I'm not a woodsman at all.
I'm a banker. Tree Farming is just
a hobby of mine."

"Aah! Another man who thinks
for himself!"

While it hasn't been established
that all "thinking men" smoke one
particular brand of cigarettes, such
conversations *could* happen all over
America every day. No longer is
the great bulk of timberland in this
country owned by large wood-using
industries as it was at the turn of
the century. And farmers own very
little more timberland today than
do "investor-type" owners—bankers,
lawyers, widows, shoe clerks, and
the like who have managed to buy
small tracts and to hold on to them
as a secure investment. To be ex-
act, forest industry owns only 13%
of America's timberlands, farmers
34%, and other private owners 26%.

A classic example of the modern-
day timber owner is F. Norman



Paul R. Adams, attorney general for the state of Michigan, enjoys working on his tree farm and finds it a sound investment.

Gallaspy of Louisiana's DeSoto Parish, who was honored in March by being awarded Louisiana Tree Farm Certificate No. 1000 by the Louisiana Forestry Association. Gallaspy is a dairyman, tree farmer, police jurymen, and a banker. Like Roswell Garst, who was chosen as the midwest farmer to host Krushchev on the Russian visit to America recently, Gallaspy typifies the entire economy of his native parish. And no Roswell Garst was accorded any more attention than was Louisiana's 1000th Tree Farmer, who was awarded his certificate amid the most jubilant celebration ever held in the history of forestry.

Attracting more than 1500 people from Louisiana, Arkansas, and Texas, the festivities included aerial tours of northwest Louisiana timberlands, a forest products parade that stretched for half a mile, and a "come one, come all" barbecue luncheon, topped off by the official dedication. Governor Jimmie Davis (a Tree Farmer himself) gave the wel-

coming address, with John H. Hinman, chairman of the board for International Paper Company, making the main speech.

Many of those attending learned for the first time that there's a big difference between a tree farmer and a Tree Farmer — that an official Tree Farmer's land has been managed so as to produce the maximum amount of timber per acre on a continuous basis. They learned, too, that a certified Tree Farmer becomes a part of the American Tree Farm System which is sponsored nationally by American Forest Products Industries, Inc.

Gallaspy, who has been cashier of the Pelican State Bank since 1931, likens a well-managed timber tract to a savings account, except that the timber produces more interest. "Just like most everyone else," he said, "I can't save any money out of my regular business. The only way I've been able to establish an estate is through timber."

Like many timber owners, Gal-

laspy has had his share of temptations to clearcut the entire tract by offers which, at the time, seemed very high. Perhaps his greatest temptation came in 1944, the year of the big freeze, when much of his timber suffered from ice damage. The offer was \$6800 for all trees over 10 inches in diameter, almost a clearcut job. But sticking to the banker's philosophy of "never dipping into your principal and depleting your assets," Gallaspy instead sought the advice of a consulting forester, who sold the timber on a selective cutting basis on bid, leaving a good stand of timber that would yield timber products perpetually. It was a good decision: He realized \$10,000 from the sale.

It was then that Gallaspy became sold on proper timber management, and he's been sold ever since. Starting out with 2500 board feet per acre on his land in 1943, he has sold timber products from it regularly and today has 3000 board feet per acre!



Syndicated columnist George Sokolsky is one of nearly 17,000 property owners in the United States now proudly displaying the sign of the tree farmer.

Helen Voss, registered nurse in Hammond, La., owns a 40-acre Tree Farm. Tree Farmers come from all walks of life, representing every type of occupation.



Gallaspy's use of his lands typifies the agricultural economy of DeSoto Parish, where timber has come and gone in many cycles since the parish was first settled. Starting out as virgin forest, as did most of Louisiana, much of the area was cleared for cotton farming in the early 1800's; after the Civil War the land reverted to trees, which were harvested by clearcut methods in the early part of this century. Then cotton farming was tried once more until World War II caused a shortage of labor which never returned. DeSoto Parish, like her one-thousandth Tree Farmer, has settled down now for the long pull ahead with a cattle and timber economy.

When Gallaspy stepped up to receive his gold-bordered Louisiana Certificate No. 1000, he came very close to becoming America's Tree Farmer No. 17,000, also; the national count on February 1 lacked only 78 from reaching that number. By next year, the twentieth anniversary of the American Tree Farm program, there should be more than 20,000 official Tree Farms in the nation, judging by the present pace of dedications.

Success of the Tree Farm idea has surpassed even the visions of its founders. Already the 50 millionth Tree Farm acre has been dedicated and, although the need for such a national project had been apparent since at least the 1920's, it was 1941 before the idea was hatched. Forestry and industry leaders knew that some means of recognition should be given to small and large landowners who managed their forests wisely in order to promote such conservation practices. Too, there was a need to show that private owners could manage their own timber without federal regulations being necessary.

A small-town editor thought of the term "Tree Farm" and offered it to the industry; it caught on, if you'll pardon the expression, like wildfire under the leadership of the American Forest Products Industries, Inc. The first Tree Farm in America was dedicated in June, 1941, and Alabama became the first state to launch an organized program.

Since 1941, the attractive Tree Farm signs along the highways and byways of America have become a familiar sight to motorists, as more and more small and large landowners have gotten into the spirit of the Tree Farm program. Part-time or

(Turn to page 52)

Reading
about

RESOURCES



By MONROE BUSH

The Fabulous von Schrenk

I KNOW of nothing more satisfying than a competent biography of a great man. With the publication by journalist James E. Cronin of *Hermann von Schrenk, The Man Who Was Timber* (Kuehn, Chicago, 1959) we are given just this: a competent summary of one of the half-dozen most powerful personalities ever to be associated with American timber.

Schrenk could claim brilliance bordering on genius—and it seems that his arrogance stopped little short of doing so. His tremendous energy was legendary, whipping him to a ceaseless schedule of writing, lecturing, traveling, researching, experimenting, negotiating. Personally, this aristocratic German with the cold blue eyes could be as hard as a railroad spike, or again, at times and places of his own choosing, he was the perfect gentleman, cultivated and charming.

Cronin reminds his readers repeatedly that von Schrenk had as many enemies as he did friends—or almost as many. He was loved, respected, tolerated, or hated, depending upon whom you talked with. And if my reading of biography has taught me anything, it is that with great men this is very likely the case.

The times were ripe for von Schrenk. He graduated from Cornell in 1893, trained chiefly in botany and agricultural pathology. Federal programs in both agriculture and forestry were in those happy years just beginning to break into first bloom. The demand for timber was still climbing, yet only in certain few and very illuminated quarters did anyone perceive that the supply was exhaustible.

There was a place waiting, a prominent, pioneering place, for a young scientist who had the intelli-

gence to understand the service—the absolutely essential service—that science could render the timber industry. Von Schrenk proceeded immediately to appropriate this role for himself, apparently without any doubt whatever of his fitness for the job. And the record of fifty years amply substantiates this decision!

The career that ensued is best defined by the word "aggressive." This describes his every thought and action, and his relationships to those with whom he worked. For seven or eight years von Schrenk was associated with the Department of Agriculture, caught somewhere between pathology and forestry. During this period, too, he maintained various activities at and in conjunction with the Botanical Gardens in St. Louis. It was a time for him of mercurial growth, interrupted only occasionally by conflicts that he could not easily win. Yet these years laid the firm foundation for the decades of virtually independent work that were to follow.

By now he had clearly marked wood preservation as one of his provinces, and as a young man of scarcely thirty he was already a valuable asset to the nation's sprawling railroads, whose cross-ties were rotting far faster than good management could countenance. Fifty years later, at his death at eighty, von Schrenk had established himself as the foremost scientist ever to labor in this field. But it was not his only field. His work in forest pathology was monumental. As a collector of botanical specimens he was without peer in his generation. As a leader of men he was a fighter of the caliber of Pinchot—with whom, incidentally, von Schrenk had intermittent squab-

Cronin is guilty of one weakness, however, that leaves this otherwise "competent" book less than satisfying. In dealing with a man so vivid, so powerful and controversial as von Schrenk, the author is seemingly unable to tell us the "whys" of his strength. There is no revelation here of the inner scientist. It is a repertorial job, but it is not the major biography that von Schrenk deserved.

And, by way of postscript, let us note here for the faithful that von Schrenk was at one time a vice-president of The American Forestry Association. (He was also president of the Missouri Forestry Association at the same time. *Editor*)

New and to Note:

Conservation is all too often thought of solely in a national sense, as a responsibility of the Congress and the administrative departments, as a subject for great nation-wide organizations and the conferences they spawn. This is a sort of inverted provincialism. Actually, conservation begins where the people are, in ten thousand local communities. Without conservation here, at what politicos call the "grass roots," there will be no conservation anywhere.

I know of no book that stands to contribute as much to grass-roots conservation as one recently authored by Alice Harvey Hubbard, *This Land of Ours, Community and Conservation Projects for Citizens* (Macmillan, N. Y. 1960).

Mrs. Hubbard has, with astonishing thoroughness, tracked down and reported upon practically every important local and regional conservation project in the land. With simplicity that does not violate the im-

(Turn to page 60)

Does the new planet-powered TD-25 do twice as much as clutch-steered competitors?

Here's why the 230-hp International TD-25 can outwork clutch-steered king-sized crawlers—often by an amazing margin.

As standard equipment at no extra cost, the TD-25 gives you combined, built-in Planet Power-steering; and Hi-Lo on-the-go power-shifting.

Planet Power-steering gives you full-time "live" power on both tracks, to make full-load turns—and to eliminate load-limiting "dead-track drag." And Hi-Lo on-the-go power-shifting instantly matches power to conditions to prevent load-losing, time-wasting "gear-shift lag!"

And only the "25" is powered by the direct-start 6-cylinder International DT-817 engine. Dual valving makes this high-torque Diesel a "free breather"—provides for peak turbocharging efficiency, for full-load performance from sea level to timberline!

Measure the margin of bonus production the TD-25 can give you, in logging and road-building—compared to king-sized clutch-steered crawler power. Power-shift and power-steer the "25" with king-sized loads—around curves, upgrade, anywhere. See what it means to simply shift the "25's" bank-side track to high range, the other to low—to get slope-hugging, full-bite benching. Let your International Construction Equipment Distributor demonstrate!



Here's your 76-page cost and production estimating book—newest, most authentic and complete guide for estimating material-moving costs—and for selecting equipment combinations for top profits, anywhere! Yours for the asking from your International Construction Equipment Distributor!



"Yes," says TD-25 operator,

Bob von der Hellen, Eagle Point, Oregon, in these words: "I know from experience that any other 'dozer tractor would need two weeks to accomplish what I did in only seven days with the TD-25. (They compared with a new competitive crawler of similar rated hp). The main reason is TD-25 ability to steer and push with full power on both tracks all the time. That powerful (turbocharged) engine also helps and the TD-25's torque-converter has the fastest no-slip action I ever handled."



**International
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Walter Mitchell holds a "hand-picked" Virginia pine cut from natural stand.



The Wonders of a "Worthless Tree"

By ROBERT R. BOWERS

THE day Walter Mitchell and I headed into Putnam County to survey the possibilities of purchasing a farm there, the weather seemed determined to keep us from it. An unusually warm January had thawed the rock-based road, and our tires slipped wildly, while the heavy rain kept the windshield wipers from giving us constant visibility. When we finally arrived at the 85-acre farm, however, our first view across the valley was almost enough to convince us that we wanted the land. Rimming the ridges and scattered up and down the slopes and out into the open fields grew wave after wave of green Virginia pines. In contrast

to the deadened brown of winter fields, the sight was beautiful and refreshing. Because of our initial reaction, it came as quite a shock when the owner casually apologized for the "filth," as he called the pines. "You can get rid of that trash by cutting it down and burning it off," he advised us.

It struck me how we differed in our sense of values and sense of beauty. What we called "beauty," this man called "filth." Such an attitude towards this common pine of West Virginia is, however, nearly universal. It would seem that people often have a greater respect for trees

they must purchase and plant than for those which seed in naturally.

When Walter and I first looked over these native pines, however, we were certain that here was a great potential of this farm. We were not, however, exactly sure where the potential lay. The trees went from one to 12 feet in height and were from one to 10 years old. The average diameter of the older trees was about three or four inches. Erratic growth patterns crowded some trees, while others were open-grown and full crowned. This left to us many avenues of approach, and we set out to survey them all.

After purchase of the farm on a long-term mortgage basis, we signed up for timber stand improvement work under the ACP. It was our intention to thin our pines and give the remaining ones a chance for faster growth. The ultimate of this effort would be pulpwood in about 10 years. However, the forester changed our minds on that, and rightly so. He recommended against thinning, due to the susceptibility of Virginia pine to wind fall. The shallow root system apparently is compensated for by its social nature. By growing in small groups, one tree protects the other.

The alternative to thinning for future pulpwood was to allow nature to take her time in maturing the trees. However, borings into a few sample trees indicated that the growth was very slow. Regardless of this fact, we would have been content to wait except that we pay a five per cent interest on our loan. It was estimated that by waiting 20 years, we could realize \$2.00 per acre per year from the pines, based upon present day prices of pulpwood; that amount is only about three per cent on our investment. While I'm somewhat sentimental when it comes to growing trees, the lack of wisdom in paying five per cent to get three per cent is self-evident, and we believed we could do better by following another pattern.

The main trouble with the pulpwood enterprise, however, was not our low interest, our slow growth, or the susceptibility to windfall. The big problem was that these trees were not growing on "worn out" or poor land. They had spread into the pasture and meadowland, which was too good for such a poor crop.

We were beginning to understand why the local residents showed such a complete lack of concern over this abundantly-growing native tree. Yet we could not bear to cut the trees down without investigating every outlet as a possible market.

After walking over our farm a number of times and noting the wide range in sizes and age classes of our pines, it suddenly struck me that the answer to our problem was most obvious—Christmas trees. Why not? Here were 20,000 trees of all sizes and shapes just waiting to be marketed, and not 20 miles away were 100,000 people needing Christmas trees. Surely, I thought, from that many trees a man should be able to hand-pick at least 1,000 which would stand the competition.

In view of the abundance of Virginia pine in my county, it sounded somewhat ridiculous to say that Walter and I were going to fight the laws of supply and demand. In fact, since many of my friends are among the elite Christmas tree growers, I found myself hesitant to admit that



Stands of wild grown Virginia pine add to the beauty of Robert Bowers' farm.

"we too are in the business." Nevertheless, in 1959 we tried our scheme and we made a profit. Our profit was limited, however, not by the quality of the trees so much as by our own ignorance about marketing. Last year we cut 53 Virginia pines, all that one car trailer five feet wide and nine feet long would carry. We placed them on the Junior Chamber of Commerce's Christmas tree lot on consignment, and every one of them sold for from 75¢ to \$2.50 each. Our share of the profit was \$48.50. Not counting our labors, we made \$37.64 after deducting \$11.86 paid for gasoline and trailer rental.

Our profits were small financially, but business-wise they were immeas-

The author's neighbors helped him meet ACP deadline for tree planting, and in return for their assistance they were repaid in free Christmas trees. Virginia pines are used extensively for Christmas trees



urable. The experience we gained in 1959 will pay off in 1960 and in years thereafter. In fact, from this small start into an impossible business, one of selling something as common as pebbles in the sand, our future is bright. Already, lot owners have seen that there is a difference in trees. From those we delivered to St. Albans, we now have at least three sales committed one year in advance. At the same time we chanced upon another market from which we shall realize a maximum profit from a minimum effort.

When we purchased our 85 acres of forest and farm land in Putnam County, it was generally conceded that Virginia pine was "sick." It was our belief, however, that the tree was merely a victim of people who lacked sufficient imagination to put it back on its feet. However, it might be clearer if we diagnose the "illness" before we prescribe the cure.

Virginia pine has always been used in my valley as a Christmas tree. Each year the markets are flooded by truckload after truckload of them. Farmers have cut, transported, and unloaded them at distances of 10 to 75 miles for as little as 10 cents per tree, and rarely more than a quarter. When trees are stomped and packed with skill, a half-ton pickup truck will hold about 40 or 50 trees of the six foot variety. Rarely, however, were the packers skillful; a truckload of 25-30 trees was about average. This meant that a man was lucky to receive more than \$3.00 to \$5.00 per truckload, if he sold his trees at all. Therefore, if anyone made money on the Virginia pine at Christmas time, it was the lot owner. The lot operator could very well afford to buy 100 trees at 10 to 15 cents each, selling a third of them for \$1.00 or more, suffer the loss of the remainder, and still make a goodly profit. He didn't fret over the 65 trees that were wasted, for he had more than gotten his money back.

Two things have kept the farmer who owns these trees from making money. One is the abundance of the pine on nearly every farm. Seeing this ever-present quantity makes a man think himself lucky to get a price of any kind for his trees. The other factor is that no effort has been made either to select or to develop a quality tree. Trees have been accepted exactly as nature grew them, with no attempt to improve on nature. Whole fields have been cut, with cutters removing all shapes and sizes in one mighty effort to get

quantity instead of quality. From the "trash" that hit the Christmas tree markets each year, Virginia pine got itself a bad name. It is, however, a much better tree than attitudes toward it reflect.

Bucking tradition as we had decided to do was a tremendously challenging task. Gaining stature for an already condemned product was not altogether a bed of roses. Success would open up an entirely new source of income for farmers across the county, and it would certainly be a feather in our cap, yet failure would be nobody's burden but our own.

The basic resistance to a "wild grown" common tree was unbelievable. We were not long in realizing why landowners had preferred to strip their fields and take a chance on unloading at local Christmas tree lots at whatever price they could get. The first thing we learned, after scouring the countryside for markets, was that one doesn't consider a sale consummated until the money is in his hands. From our newspaper advertising and personal contacts, we had 15 different commitments to purchase from 25 to 500 trees each. It sounded too easy, but we soon found out why. Of the 15 commitments, we held on to only one sale, and that one was on a consignment basis. This meant that if the trees sold, we received \$1.00 each. If they did not sell, we got nothing but the expense of cutting and hauling the trees.

What happened to most buyers, we found out later, was that no matter how cheap our price was, somebody would sell cheaper. We considered \$1.00 per tree delivered as a fair price for hand-picked trees. Yet we offered them on the stump for 50 cents. Still we were undersold by desperate people who ended up "giving" their trees away rather than chance the loss of a sale. Such is the history of Virginia pine sales in my valley. The 53 trees which we did sell sold faster and averaged better in price than the "low cost" trees. The difference was that both the grower and the lot operator made a profit in our case, not merely the lot owner.

An interesting observation was made during our first try at selling a tree which was normally classed as "worthless." Because we priced our trees at \$1.00 each, they gained a greater initial interest among lot operators than those advertised at much lower prices. The reason, as one lot man put it, was "when the seller

doesn't think much of his trees, as indicated in his asking price, we aren't much interested in them either."

The larger buyers of Christmas trees are hard-boiled businessmen, and they will scour the state to find a better, cheaper tree. One man who looked at our pines left the next day for Indiana in hopes of finding as good a tree at from 10 to 25 cents per tree cheaper. However, it is my own conclusion in this respect that a good tree will always sell for a good price. "People can't resist healthy, well-shaped trees, and they are willing to pay for the quality," a plantation owner told me, and I believe it firmly.

Initially, we had no experience under our belts to serve as guidelines of operation, and we made many mistakes, especially in our approach to marketing. Even so, after selling what we had just as nature grew it, we are confident that our plans for manipulating this native tree will pay off. We now have 12,300 hand-planted trees in the ground, and they are all of the "nursery grown" varieties. They cost us nearly \$500 to purchase and plant, and it will be five to seven years before any financial return will be realized from them. During the interim, we are counting on our natural seeding of Virginia pine to supply our annual Christmas trees. We expect to sell from 200 to 500 trees per year, and perhaps more, each winter on the local market.

Toward this end, we have begun a program of encouraging nature in the development of a better tree. We have walked over the area many times, and each time we thin a little here and a little there until each tree from one to 10 feet high has room enough to spread out. In the winter we began cutting off the "cork screw" tops of our pines, hoping to force the tops to fill out better. While this is old wood, our own experiments of a year ago indicate that the most "die back" which will occur will be to the limb crotch. This should not be a factor as the top fills out in the next year or so, but even if the dead stub was unsightly, nothing will be lost because the trees will never sell as they are.

In addition, I see no reason why Virginia pines will not respond to heavy pruning just as Scotch, red, and white pines do. Therefore, in July and August a complete overhauling of our native stands will begin. Starting with the smallest

(Turn to page 51)

BUFFALO BILL'S TOP HAND

By M. W. TALBOT

THE time: July, 1900. The question: Would he like a job on the forest reserve? The job: Forest Guard on the Shoshone Division of the Yellowstone Park Timberland Reserve then being put under administration by the General Land Office, Department of the Interior. The reply: He would. The man: Top rider of Buffalo Bill's Wild West Shows.

Thus at the turn of the century began the notable public career of Jesse W. Nelson, all of which raises another question: Why did this glamorous cowboy give up the plaudits of Madison Square Garden and the management of the big Wyoming ranches of his boss and friend, Colonel Cody, for the (then) dubious honor of becoming a forest ranger? Certainly not for the lure of gold; the new job paid \$60 per month, "with nothing furnished." For the answer, we must go back several years to his concern over a forest fire which started before he left the Cody ranch on a long camp trip and, in his words, "was still burning when we returned some two months later, and nothing had been done to suppress it. In fact, the fire continued until winter snows put it out. It was this unnecessary waste of public property and the utter lack of public interest that first aroused my interest in forestry." He saw the need for better husbanding of the rich forest and related resources of the West. He felt the urge to do something about it. And he devoted the next 44 years to just that.

Nelson's various assignments and periods of service are matters of record: Forest guard, ranger, and supervisor, in Wyoming, 7 years; Chief of Grazing, Rocky Mountain District, Denver, 7 years; Grazing Inspector of the Forest Service, U. S. Department of Agriculture, Washington, 6 years; Assistant Regional Forester in charge of Range and



Jesse W. Nelson was the top rider for Buffalo Bill's Wild West Shows before working to improve resource protection.

Wildlife Management, California Region, 14 years; and Superintendent, San Joaquin Experimental Range, 9 years. Unfortunately, especially for the younger generation of foresters, a clear picture of Nelson the man and a full appreciation of what he contributed to solution of difficult forest-land problems won't be found in official records. Such things must come from colleagues and co-operators. Even a scrutiny of his early diaries, which are packed with evidence of the rugged life, reveals but little of the measure of the man: his integrity, resourcefulness,

and courageous dedication to the job.

In attempting to interpret this part of the chapter on the beginnings of western conservation, I like the way Nelson's understudy and successor in the California region, Fred P. Cronemiller, puts it: "Equipped with some half-broke horses and a ridin' outfit—and not much else—the young man started out to stop rampant grazing trespass by stockmen and some occupancy trespass by nesters, to apply badly-needed game-law enforcement, to fence some horse pastures, fight some fires, build some cabins, and brush out some trails, to get some order into the various forestland uses, and to become a key citizen in a frontier community. Having handled these details with dispatch he moved up in forest-land administration, where his ability to make order out of a somewhat chaotic Forest Service grazing business changed a recalcitrant livestock industry to one accepting national Forest Service administration, at least passively, and generally with commendable co-operation. Overgrazing problems were met and solved with rarely an appeal to higher authority—more often with full acceptance and the feeling that a fair decision had been made."

Back of this public respect were two things. Nelson was interested in the welfare of local people as well as the land. And, from his ranch background, he was able to meet stockmen on their own terms. As whimsically put by one local resident: "When he shook out his rig, the problem was half whipped." Occasionally in the early years, however, his soft-spoken, genial manner and neat "city" clothes proved misleading—and discomforting—to rough-and-ready stockmen unaware of his bronc-busting past. Oft told, and still retold around the range

(Turn to page 61)

OLD MAN'S BEARD

By DEV KLAPP

MOST people think of adventurers as stalwart, swashbuckling men, striding, gun in hand, across an African veldt, or as resolute characters beaching their boats on South Sea islands to the beating of native drums.

Yet deep in the southern states of Florida, Alabama, Mississippi, and Louisiana, there are men and boys who daily meet adventure head-on while pursuing what appears to be a most unexciting vocation. They are moss-pickers, the men who pole their bateaus, skiffs, pirogues, and flat-bottomed boats over thousands of southern creeks, rivers, lakes, and bayous, pulling long streamers of gray Spanish moss from the oaks and cypress trees along the banks.

These are quiet folk, more often old than young. They work slowly, moving from tree to tree, thrusting long poles up into the luxuriant moss hanging from the lower branches. These poles are tipped at one end with either a small cross bar or a long nail, to snag the moss when the poles are twisted.

When his day is done, the picker roughly bales his moss for transport to a favorite dealer. The dealer then ships it to the nearest mill for processing.

Not long ago I visited Pierre Part, near Napoleonville, deep in the Louisiana Cajun country, to find out about this unusual business. While talking to the mill foreman, a wiry youth drove up in a battered pick-up, loaded to the top with rough bales of moss. The foreman grinned at me and said, "That feller there can tell you more than I can about the business. Come along with me while I weigh his load."

Antoine Broussard (we will call him that) is twenty years old. A full-



Gathering Spanish moss along Bayou Pierre Part, near Napoleonville, Louisiana

bloodied Acadian (Cajun), his father had been a shrimper, a trapper, and an alligator hunter until disabled. So now Antoine picked moss to support the family. "The money isn't much, M'sieur," he explained, "but I am on the bayou and I like it."

Antoine's English is heavily loaded with dialect, but as I knew some Cajun French, we got along fine. He invited me to his house for supper and to stay the night, so that I might learn first-hand about the business.

Antoine's mother is as round and jolly as his father is thin and quiet. While we waited for supper, a meal composed of fried catfish, hush-puppies, shrimp patties, and chicory coffee, Antoine told me of his life on the bayou.

"Do you have many adventures?" I asked.

Antoine smiled. "Oui," he answered. "Many times I am nearly drown when the gator upset my pirogue, if I am not careful. Then too, I am sometimes snake-bit." He raised a hand, scarred with criss-cross weals, crude knife slashes to drain out poison. "Moccasin," he explained tersely.

And so his saga went. Knife fights with rival pickers, over moss, or girls, or just for the heck of it; battling sudden floods or malaria fever; even an impromptu wrestling bout with a crusty mother alligator when he stole her hatch. But life on the bayou isn't always grim for Antoine. There are dances to attend now and then, hunting and fishing any time, and occasional trips to

New Orleans with Mama and Papa Broussard.

Next morning Antoine and I spent poling up and down the bayou, pulling moss from the huge swamp trees. We met many folk on the bayou — fishermen, shrimpers, and moss-pickers such as Antoine. They were friendly, smiling people, who always spoke and waved.

Later that day, after bidding Antoine adieu, I visited the moss miller in town. I learned a great deal from him about this odd industry that nets Louisiana over \$1,000,000 a year. After the moss is ginned to remove the outer coating of gray vegetable matter, the black wiry inner moss is shipped to upholsterers and mattress makers for the stiff, springy stuffing used in their trades.

Another interesting and quite modern use for Spanish moss has been discovered. Valuable chemicals found in this unusual crop have hiked the value of moss as much as \$150 a ton. This price increase can mean a higher living scale for Antoine and his brother moss-gatherers, whose daily take is about \$500.

But more interesting to me was the moss itself, and the folk who gathered it. Along the bayous where I did my research it is called Old Man's Beard, because of its long, gray, sweeping strands. Spanish moss belongs to the pineapple family, strange to say, and the minute seeds float through the air on flimsy parachutes and attach themselves to the bark of trees where they sprout. The moss is not a parasite, but lives on air and does the tree no harm.

New Park at Great Falls of the Potomac

(From page 27)

cliffs and deep crevices are sculptured by water action in many forms. High on the palisade you can find numerous pot-holes, where swirling waters churned pebbles and stones until they had ground deep, perfectly round holes in the rock. Some of the pot-holes are as big as your bathtub.

North and South meet in the flora at Great Falls. Such northern trees as beech and hemlock are associated here with the shortleaf and Virginia pines and tuliptrees of the South. The forest is predominantly hardwood, with several species of oak, hickories, tuliptrees, ashes, red maples, sycamores, and elms. Flowering dogwoods, redbuds, hollies, hoptrees, fragrant sumac, bladdernut, fringe tree, laurels, azaleas, and many other native trees and shrubs make up the understory. There is a great variety of wildflowers. Some of them are quite rare. Some, by various tricks of nature, have migrated to this spot from great distances. Miami mist, for example, is a wildflower named for the Miami River in Ohio, its native habitat. Presumably flood waters from far up in the Appalachians brought the seeds down the Potomac to find a new home on the rocky cliffs at Great Falls.

On a nature trail near the falls, 24 kinds of ferns have been marked. Mosses and lichens grow on the rocks and boulders in rich variety. Numerous pockets of moist earth and miniature bogs at the edges of dry slopes provide habitat for moisture-loving and upland types of flora side by side.

The Great Falls park area is rich in historical interest. George Washington dug, as well as slept, here. The earliest colonists on Virginia's shores knew the Great Falls of the Potomac. Small boats or barges could be poled up the river from tidewater as far as the falls. To succeeding generations of colonists, whose eyes began to turn westward and who dreamed of exploration and settlement in the great unknown interior, the Great Falls were an obstacle. The roaring cascades blocked further up-river navigation.

In 1749, a trading corporation known as the Ohio Company was formed to develop a trade route, via the Potomac River, to the West. Young George Washington, serving

as a surveyor for this company, developed an early interest in the problem of making the Potomac navigable. Later he had an active part in promoting the construction of a canal around Great Falls; in 1785, following the Revolutionary War, Washington became President of the Potowmack Canal Company. He visited the falls area many times. His diary on October 17, 1785, told of having "a rough level of the proposed cut." Other entries tell of visits to make plans for the project, and later to observe the progress of the work.

After Washington was called upon in 1789 to lead the new United States as its first president, he could give little time to the canal project. The company had financial difficulties; the work made little progress. Not until after Washington's death in 1799 was the work completed and the canal placed in operation.

The Potomac navigation project included not only the canal at Great Falls but four other short canals—one bypassing the rapids known as Little Falls downstream, and three others around falls and rapids farther up the river. Construction of the canal at Great Falls was by far the biggest and most difficult undertaking. This canal was nearly three-quarters of a mile long. Five locks, each a hundred feet in length, were built to overcome the 77-foot vertical distance between the upper and lower parts of the river. The upper locks were walled with huge, hand-hewn blocks of red sandstone, quarried at Seneca several miles up-stream. The entrance to the canal from the river below the falls was cut through nearly 40 feet of solid rock.

A settlement called Matildaville alongside the canal grew to be a sizable town. It was named for Matilda Lee, first wife of General Richard Henry ("Light Horse Harry") Lee. Lee was associated with Washington in the Potowmack Canal Company enterprise. In Washington's and Lee's vision, Matildaville would one day become a great city at this key point on the route of a growing commerce with the West. The forest has since reclaimed the site. Only a few vine-covered ruins can now be seen. The most prominent ruin at Matil-

daville is that of the jail.

For more than a quarter of a century, canal boats carrying merchandise from the cities of the lower Potomac and Chesapeake Bay went through the canal at Great Falls and were poled up the river to the frontier settlements. Boats and barges that were floated downstream were loaded with pig iron, flour, corn, whiskey, and other products from the interior. Rafts of logs also were floated down to be sold for lumber.

The Potowmack Canal Company was never a financial success. Its operations came to an end in 1828. By that time, a new 186-mile-long canal, the Chesapeake and Ohio Canal from Georgetown (now part of Washington, D. C.) to Cumberland, Maryland, had been constructed on the Maryland side of the Potomac. The National Road, opened to the West in 1806, had given earlier competition. When the Baltimore and Ohio Railroad completed its line to St. Louis in 1857, the Potomac River, always a difficult waterway to navigate, was no longer looked to as a principal means of access to the West. But the Chesapeake and Ohio Canal, which began operations in 1828, continued in limited use for more than a century.

The abandoned Potowmack Canal at Great Falls gradually went to ruin. Mosses and vines covered the stonework. Mud and debris from floods and freshets partly filled the canal and locks. In a few decades the project was all but forgotten.

But people from Washington, and from other parts of the country and from abroad, continued to visit Great Falls, recognized then, as now, as one of America's great scenic wonders. They came mostly to the Maryland shore; the Virginia side was not easily accessible. Eventually a toll road provided a less round-about route to the Virginia shore. In the early 1900's an electric trolley car line was built to the falls. The Virginia shore at Great Falls then became a favorite spot for Sunday outings and picnics. A private amusement park sprang up. The merry-go-round's raucous mechanical music rivaled in volume the roar of the falls. But when the electric car line was abandoned in the early 1930's, Virginia's Great Falls area again became a forgotten place.

Practically all of the Virginia shoreland at Great Falls, well over a square mile, has been held for years by the Potomac Electric Power Company, which at one time had thoughts of a hydroelectric power development there. Proposals for bringing this area into public ownership for park purposes have been made many times. During the 1930's the National Capital Planning Commission and the National Park Service developed plans for George Washington Memorial Parkways from Mount Vernon to Great Falls on both the Virginia and Maryland sides of the Potomac. A committee of the American Society of Civil Engineers proposed that the society undertake the restoration of one of the locks and the turning basin of the old canal as a monument to George Washington, the engineer.

In 1952, Fairfax County purchased 16 acres at the falls. Here the Fairfax County Park Authority made an attractive recreation ground, with picnic and playground facilities, a refreshment stand, and a pavilion for group activities. A merry-go-round was brought back once more, its music box more subdued. On an additional 60 acres which the county leased from the power company, the Park Authority partially restored a portion of the old canal and two of the locks. The county's recreation area has been heavily used. Returns from a 50-cent parking fee not only have covered costs of maintaining the area but have helped toward other parts of the county's park program.

Along the shore above the Potomac gorge, where wildflowers abound, a local garden club has developed a nature trail. I mention this trail with intimate personal feelings—I was drafted by my wife to work on it. But I was as proud as anyone when the Great Falls Garden Club's trail project received a national conservation award from the National Council of State Garden Clubs.

About four years ago it was reported that the power company was planning to sell its Great Falls property to real estate promoters. The Nature Conservancy, an organization devoted to the preservation of natural areas, quickly set up a committee to work for the preservation of the Great Falls area for public use. Included on the committee were F. Raymond Fosberg, vice president of The Nature Conservancy; Elting Arnold, F. Gravatt, and Mr.

and Mrs. C. J. S. Durham. Also working actively for the park project were Dr. Ira N. Gabrielson, president of the Wildlife Management Institute, and Charles C. Robinson, treasurer of the Fairfax County Park Authority.

In the forefront among those working for a Great Falls park were the C. J. S. Durhams, "Jack" and Ethel, whose home is close by the park area. Jack Durham's brochure, "Washington's Potowmack Canal Project at Great Falls," called attention to the unique natural and historical values of the area. Ethel Durham supervised the development of the nature trail. I am indebted to Mr. Durham for much of the historical data in this article.

Efforts of the committee and its co-workers at first were directed pri-

al of \$3,000, which is the amount of taxes the power company pays and will continue to pay on the property to Fairfax County. In exchange, the National Park Service granted a 50-year lease to the company on 400 acres near Beltsville, Maryland. The Maryland property was acquired by the federal government for the Washington-Baltimore Parkway, but was not used. The power company wanted the land for transmission lines. It will pay a yearly rental of \$1,500 for the tract. The exchange agreement provides for subsequent purchase of the properties at appraised values by the respective lessees, if Congress later authorizes such action.

Across the Potomac in Maryland, the National Park Service has jurisdiction over the 186-mile right-of-way of the old Chesapeake and Ohio Canal. The federal government acquired this land in 1938, when the century-old canal company went out of business. Legislation has been pending in Congress to authorize the purchase of an additional strip of land along the canal and the development of the canal area as a national historical park.

The C. & O. Canal park project achieved national prominence when U. S. Supreme Court Justice William O. Douglas and three *Washington Post* editors led a 180-mile hike along the canal towpath from Cumberland to Washington to dramatize the public recreational potentialities of the area.

The new park area at Great Falls on the Virginia side of the Potomac has lacked any such event to bring it to national attention. Yet this area, though more limited in extent, has equal and in some respects even greater historical, recreational, and natural values.

At the time of the opening of the first Congress in the new federal city of Washington, an English visitor went on foot up the river to Great Falls. He described what he saw as "the grandest object the Universe can supply." A century later, the British Ambassador Lord Bryce said "No European city has so noble a cataract in its vicinity as the Great Falls of the Potomac, a magnificent piece of scenery . . ."

Former President Herbert Hoover has said that "certainly the scenic views along the Potomac River gorge are equal to those anywhere . . . Perhaps no great city in our country has so near its door a place of such scenic grandeur."



Mr. and Mrs. C. J. S. Durham on the foot bridge across bed of old Potowmack Canal designed by George Washington

mainly toward the acquisition of the Great Falls area by Fairfax County. The Potomac Electric Power Company turned down the county's proposal to buy the property. In 1958, the county's Park Authority started condemnation proceedings to acquire 600 acres of the power company's land. Since the power company is a public utility with condemnation rights of its own, legal questions delayed the proceedings, and the case had not yet been settled when the National Park Service agreement with the power company was announced.

The agreement, signed by Interior Secretary Fred A. Seaton and the president of the Potomac Electric Power Company, R. Roy Dunn, involves a land-for-land swap. The company agreed to lease the Great Falls tract to the National Park Service for 50 years, at a yearly rent-

The National Park Service has indicated that it will develop the Great Falls area for multi-purpose public use, including sightseeing, picnicking, and camping. Historical landmarks will be preserved or restored. Parts of the area will be maintained as a nature preserve and outdoor laboratory. For the present,

at least, Fairfax County will continue to operate its 16-acre park within the area. Should the proposed George Washington Memorial Parkway be extended to Great Falls, it is to be hoped that it will be routed away from the areas of greatest natural interest. Park supporters hope also that Congress will

soon authorize federal purchase of the land for permanent park use.

Saved from the path of the bulldozers, the Great Falls area is to be preserved for public use. The Potomac is one of America's most beautiful and historic rivers. The Great Falls parkland project will help to keep it that way.

Forestry's Ambassador Without Portfolio

(From page 21)

du Bois, Whiskey Highball Kent, and many others. "Everyone rolled their own in those days, and I recall that E. T. Allen sketched the design of the Forest Service shield on a cigarette paper at one of the staff meetings. They were individualists, who deferred to no living man, yet held together by an unshakable belief in the high destiny of forestry and in the public value of what they were doing. Years later, Hugh Bennett was to kindle that same magnificent spirit among the men of the Soil Conservation Service."

The late Ovid Butler, executive director of The American Forestry Association, weaned Gill away from the Forest Service in 1925 and put him to work as associate editor of what was then *American Forests and Forest Life*. Gill has always admired the educational programs of the association, and he developed a warm affection for Mr. Butler, but he confesses that he never liked the regimen imposed by meeting the deadlines of a magazine. "You never feel that you are quite on top of the world when you're involved with a magazine," he told us. "In the fond belief that everything is under control, you pack a bag to take off for the Caribbean, and instead, you find yourself sweating out a deadline. No, it's too easy to become a slave to a magazine, and that kind of slavery wasn't for me."

This was a situation that Mr. Gill soon remedied. In 1926, the Charles Lathrop Pack Forestry Foundation, the first privately-endowed forestry foundation in the history of the world, was looking for an enterprising secretary, and Mr. Gill filled the specifications. During the initial period, work was focused largely on individual fellowships to create leaders in forestry by giving men of promise further training. Today it is a source of satisfaction to Gill to realize that practically all of these men have become leaders.

By 1937, when Randolph Pack succeeded to the presidency, the

foundation began to expand its spheres of interest. Pack believed that effort expended in behalf of foreign forestry would create both good will and future markets for America in years to come. Gradually, the work of the foundation was expanded to include Latin America and the Far East. It helped to create the United Nations Food and Agriculture Organization; it helped the Department of Defense prepare a forest law for Japan, and it helped the United States State Department in formulating a forestry policy for Formosa.

In this expanding effort, Gill was the chief artisan, and perhaps the outstanding program of all has been the foundation's efforts in helping to establish The Instituto Mexicano de Recursos Naturales Renovables, which has become a center of conservation for Mexico.

Tom Gill and his foundation have endeavored to sell the "integrated" approach to land management, with multiple use as one of the tools.

Mr. Gill is one of those who believe that the fundamental need in conservation for this or any other country is a unified program that stems from dealing with all the natural resources of a region as a single indivisible whole. "It's hard," he says, "to overemphasize the importance of recognizing that each resource depends on one or more of

the others, and that considering the human use of any area, the interdependence of these resources must never be forgotten. Failure to embrace this 'panoramic' point of view in managing resources has resulted in much waste of money and the loss of soil, water, and forests."

Across the years the Pack Foundation has maintained a major interest in the tropics, and Gill has become one of the world authorities on tropical forestry. A three-year study of the Caribbean region resulted in his authoritative work, "Tropical Forests of the Caribbean."

The tropics, Mr. Gill says, represent the greatest challenge and opportunity to the forestry profession. The tropical forest is the busiest wood factory in the world—a factory that provides millions of people with food, clothing, and forest products. Yet, despite the fact that here is the greatest potential producer of cellulose, chemical products, and medicines in the world, this field has scarcely been tapped, and no scientific group of people on the globe is quite so isolated as are those laboring in tropical forestry. It was to help overcome this professional isolation that Gill helped create the International Society of Tropical Foresters, an organization composed of the world's leading tropical foresters.

As the years have passed on, Tom



In foreground, from left: President Garcia of Philippines, Tom Gill, Carlos Fernandez, vice president of Nasipit Lumber Company, Inc., A.de las Alas, president of Philippine Lumber Producers Assn., Inc., and Florencio Tamesis, former Philippines chief forester

Gill has indeed become a sort of forestry ambassador without portfolio, a "trouble shooter" for forestry all over the globe. For example, when the Philippine people recently wanted somebody to "really lay it on the line" to them for the mismanagement of their resources, they called on Gill to give them the business. Gill did so, and minced no words about it, and the grateful Filipinos heaped praise upon him for giving them a badly-needed shaking up.

With the Pack Foundation now planning to liquidate its assets and disband, Gill candidly admits that this will leave a gap that some organizations should try to fill. "A privately endowed foundation can do things governments can't do," he explains. "When a quick grant is needed for a worthy study or publication, a foundation can step in promptly and plug the hole. In the past, the Pack Foundation has piloted a number of projects which, once their value was established, were taken over by government or industry. The American Forestry Association has done that type of thing on the domestic front—things the government can't do."

As the foundation approaches the end of the road, Gill also looks back somewhat wistfully at the days just after World War II when Lyle C. Watts, Henry Solon Graves, Walter C. Lowdermilk, E. I. Kotok, and others were working so hopefully with representatives of 16 other na-

tions for establishment of the FAO. John Boyd-Orr, of England, had issued his famous war cry to the effect that forestry represented the perfect vehicle that would help draw the peoples of the world more closely together, and foresters were working with might and main to make that a reality.

Advice for the prospective young forester of tomorrow with an aptitude for languages? The world is rapidly becoming smaller, Gill replies. Ideas today need transporting as much as anything else. An excellent linguist himself, Gill stresses that young foresters going to other lands should first learn the language. They should avoid segregation like the plague, roll up their sleeves, and work not with the striped pants group, but with the people out on the land.

"Chief Watts gave world forestry real encouragement at a time when it was most needed," Gill said. "It is hard for us here in America to realize the impetus given to foreign forestry movements when an important officer of the Forest Service shows a sincere interest in their problems. The forestry movement in Mexico was given a great shot in the arm by Chief McArdle when he visited that country not long ago."

The final answer to all these problems, Gill stressed, is education, a process that is often heartbreakingly slow but for which there is no substitute. Progress has been made; more is required. But today finds the people

of many foreign countries most receptive to friendly American foresters and the woods industries now moving into those nations are not only being well received but are also doing a first-rate job of managing renewable resources wisely, he added. "Actually, they are doing a much better job abroad than in many of our states today," Gill said.

Working in foreign forestry is "a two-way street," Mr. Gill stressed. Americans can learn much both from those countries that are in advance of our own in forestry and from those less fortunate. Sweden, for example, is a better example of democracy at work than the United States, in Mr. Gill's opinion—a nation with high ideals, less conflict of interest, and old enough to have discarded many predatory ideas. But even in the undeveloped nations, Americans should never mistake lack of education for lack of intelligence.

"The Creator did not give any one nation or race a priority on intelligence, creative ability, or shrewdness," he averred.

When the Mexican *vaquero* describes someone who is all man, "*un hombre y medio*," he calls him "a man and a half." Colleagues say this description fits Forester Gill. But even so, Tom Gill hasn't yet had time to do half the things he wants—especially in tropical forestry—and the list of "Things To Be Done" in his upper right-hand drawer will keep him on the jump for another decade.

On the Art of Touring

(From page 13)

with roadside parks, or waysides, equipped with tables, benches, safe drinking water, and often grills. Pennsylvania alone has 42 miniature parks and 800 picnic tables. By eating outdoors, a family of four can have a meal for the same cost as one person, two at the most, in a restaurant. Even if you're not the camping or gear-toting type, all you need carry is a supply of paper napkins, plates, and cups, plastic or wooden knives, forks and spoons, and a thermos; you can stop at a supermarket along the way to pick up ready-to-serve foods.

In considering the cost of accommodations, camping is the least expensive, costing probably less than it costs to live at home. True, you spend \$300 or more for camping equipment, but this amount is negligible when you use the gear over

a period of years. Figure such small expenses as camping fees, fuel for stove and lantern, and laundry, at \$1 a day. You may also want to spend one night a week or so at a hotel or motel, to see how the other half is living.

Stopping exclusively at motels, a family of four does very well at \$8 a night; better allow \$10 and expect some nights at \$12. If you want to use the swimming pool and other resort facilities, stop at one of the modern luxury-type motor hotels. But if your principal interest is in finding a clean, air-conditioned room with good beds and bath, a little search will lead to lower-priced accommodations. Just don't travel too long—the better-grade reasonable rooms are usually all filled by 6 or 7 p.m.

Cottages and cabins come in a

great range of prices, but you can figure about \$65 a week in a national or state park, about \$90 at the seaside or mountains. A resort hotel vacation—the rocking chair, restful type, free of chores and responsibility—costs a family of four anywhere from \$25 a day at a modest spot to \$35 or \$45 at a more luxurious place. Of course, this includes not only room and meals, but entertainment, sports, and supervised children's activities.

On a touring vacation, allow expenses for admissions and amusements. Try to stay clear of inferior attractions. There is nothing wrong with enjoying worthwhile commercial operations like the Mount Mansfield Chair Lift, Vermont, riding to the rooftop of the Green Mountains; Luray Caverns, Vir-

(Turn to page 45)

Year 'round forester. Having 305 horsepower overhead is generally accepted as essential during fire season, but Hiller 12 E's do big work in forest management all year long.

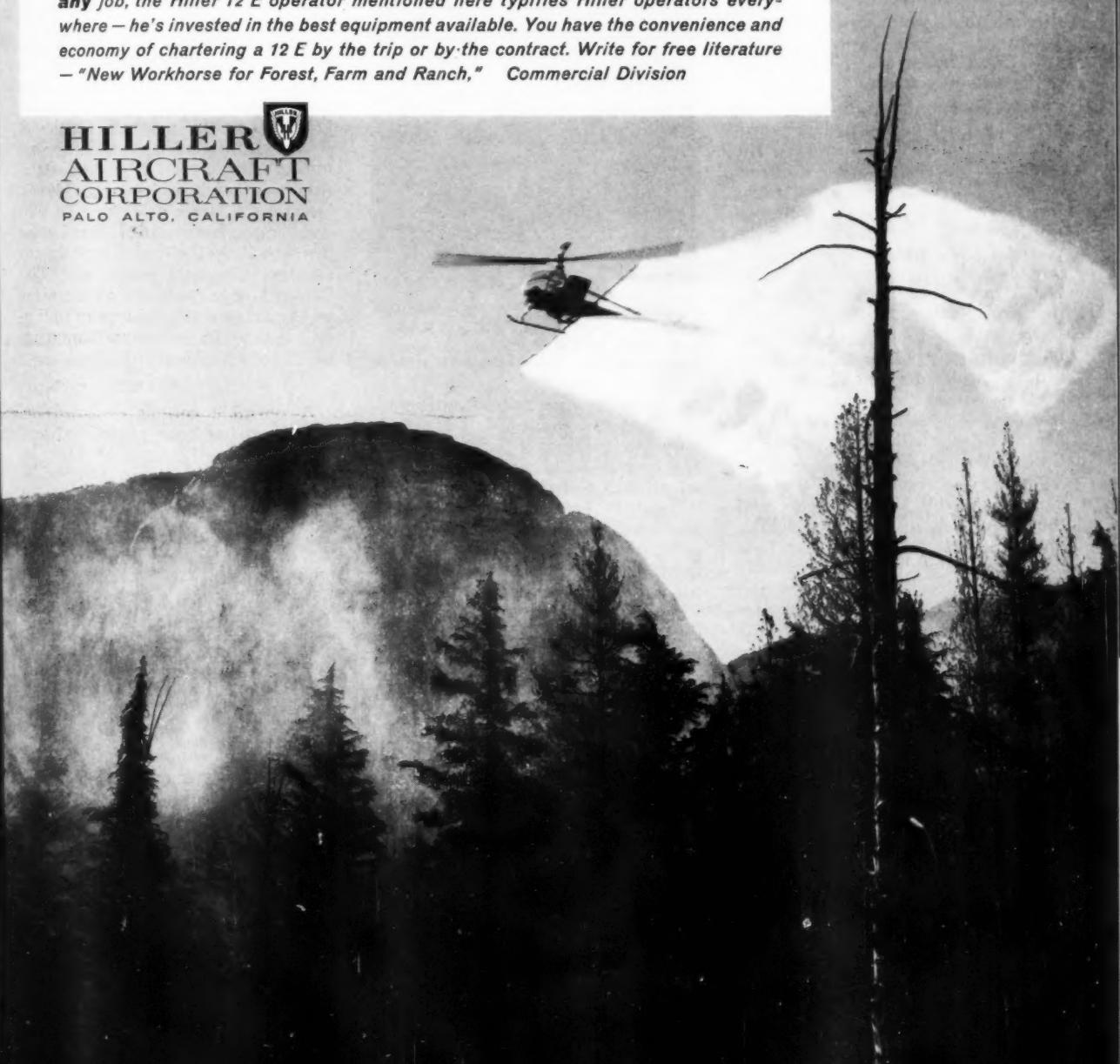
EXAMPLE: Spraying the lodgepole pine forests in Yosemite National Park and at two mile high Tuolumne Meadows to fight the insidious needle miner. After five years' research, National Park Service officials contracted for **helicopter treetop spraying** according to U. S. Forest Service entomologists' prescription — 2 pounds Malathion in 20 gallons diesel oil per acre.

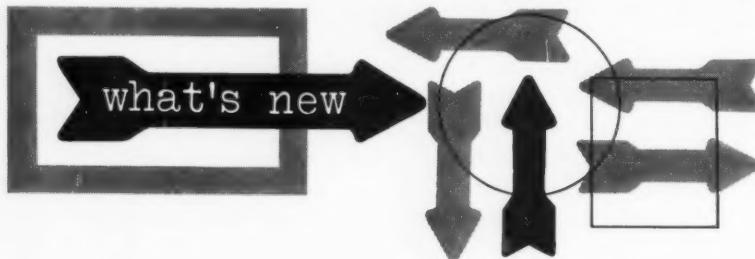
Two 305 hp Hiller 12 E's, operated by WhirlWide Helicopters, Fresno, Calif., handled the entire spray contract from "loading docks" above the 8,500 foot level. Within seconds after the first ship lifted off a dock for the 10,000 foot level with 80 gallons of Malathion solution, the second 12 E would land at the same dock for loading, refueling, safety and operating checks.

Average ground time for loading was 60 seconds! Air speeds on spraying runs, 55 mph. Because prevailing winds halted operations at 9:30 A.M., this pace continued from 6 A.M. — totaling 30 plus trips per ship, per day!

Whatever the season and whatever your forest management project, for service on any job, the Hiller 12 E operator mentioned here typifies Hiller operators everywhere — he's invested in the best equipment available. You have the convenience and economy of chartering a 12 E by the trip or by the contract. Write for free literature — "New Workhorse for Forest, Farm and Ranch," Commercial Division

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C. W. MATTISON, director of the school and college co-operation program of the U.S. Forest Service and the founder and president of the Conservation Education Association, Inc., has been retained by THE AMERICAN FORESTRY ASSOCIATION to direct a pilot study on how to best produce a series of *conservation teaching aids* for upper elementary grade school teachers.

According to the announcement made by Fred E. Hornaday, executive vice president of the AFA, the association's board of directors strongly believes that a need exists for efficient how-to-do-it conservation teaching aid materials to be placed in the hands of elementary school teachers. At a meeting of the board in February, funds were appropriated for a preliminary pilot study on how to prepare such materials with the ultimate aim being a nation-wide program aimed at all of the country's elementary school teachers. A preliminary study by Mr. Mattison will be presented to the board in June.

Pointing to thousands of requests directed to the Forest Service and the AFA each month for teaching tools, Mr. Mattison said that "too few materials are designed for ready use by busy teachers. This is a gap that needs to be plugged in our conservation education programs, and it is my belief The American Forestry Association is ideally equipped to sponsor and follow through on such a program. But I believe the program should be directed squarely at the teacher and not at school pupils en masse. If we develop the program for the teacher and employ more imagination in providing the teaching aids needed, I believe we can direct a program at the fifth, sixth, seventh, and eighth grades that will fit in well with social study courses."

In announcing retainment of Mr. Mattison as AFA's school education specialist, Mr. Hornaday said that "no specialist in the country is bet-



Charles W. Mattison, Forest Service, will direct AFA's pilot study on conservation teaching aids for use in schools

ter qualified to spearhead a program of this nature due to Mr. Mattison's wide background of experience and his special skills in the field of school and college education."

A native of New York State, Mr. Mattison received his forestry degree at Cornell University. Since then he has worked continuously in his profession of forestry and has had experience in the forests of California, North and South Carolina, Arkansas, Florida, New York, Pennsylvania, New Jersey, and Virginia. He has directed the school and college co-operative program of the Forest Service since 1946. In that capacity, he has become widely acquainted with teaching authorities and has visited many schools, colleges, and universities. This led to the founding in 1957 of the Conservation Education Association, Inc., of which he is now serving as president for a second term.

Mr. Mattison is also the author of a number of articles on conservation education and forestry and is a member of The American Forestry Association, the Soil Conservation

Society, and the Society of American Foresters. He plans to retire from the Forest Service in July.

* * *

One 42-inch stump in Jackson Park literally bit the dust in a recent demonstration held for Chicago Forestry and Park District officials and tree service organizations. In less than half an hour the stump was cut to sawdust and removed below ground level by a **Stump Gobler**, a new and different kind of stump removal equipment. The demonstration was conducted by the **MYERS-SHERMAN COMPANY** of Streator, Illinois, manufacturers of the equipment, to show the radical new **Stump Gobler** in actual operation. The **Stump Gobler** operates on a tractor power take-off and will go to unlimited depths for complete stump removal.

* * *

A portable cottage designed for sportsmen has been engineered and is being manufactured by **MIDWAY SALES CORPORATION** in Grapevine, Texas, in four sizes, ten feet wide by lengths of 50, 40, 30, and 24 feet. The cottages contain all conveniences of a home, with bedrooms, kitchen, bath, living and dining areas, all finished and equipped in rustic style. Included in the furnishings are refrigerator, range, electric water heater, dinette and chairs, panel ray heater, gun rack, rod and reel rack, wardrobes, and drawers.

* * *

A frequent contributor to **AMERICAN FORESTS**, **Jesse Stuart**, author and educator of Greenup County, Kentucky, has accepted a position on the faculty of American University in Cairo, Egypt, for the 1960-61 term. Mr. Stuart has served as principal of McKell High School in South Shore, and has taught creative writing at the University of Nevada. He will be accompanied to Egypt by his wife and 18-year-old daughter. They plan to leave in July.

On the Art of Touring

(From page 42)

ginia, the largest cave in the Eastern Seaboard states; Callaway Gardens, Georgia, a new beauty spot on the American scene, or Cypress Gardens, Florida, where you can see waterskiing performed by masters of the sport. But the traveler with discrimination should plan to avoid over-priced and over-advertised attractions, as well as the self-styled "free" roadside zoos, which prove to be nothing more than gambling blinds.

If saving is a necessity, you can map out a tour with negligible sightseeing expenses, and learn a great deal about America in the process. Consider visiting state capitals, for example. Each capital city tells a fascinating story through its art and architecture, its legislative chambers, museums, and governor's office, usually identified with great figures in history. If your youngster is having a hard time with school grades, stop with him for a visit at the state capital en route to the beach, or wherever you may be going. Specific capitols worth seeing? These four, among many others: Boston, Massachusetts, designed by the pre-eminent New England architect, Charles Bulfinch, and surrounded by such historic landmarks as Boston Common, Old South Meeting House, and Faneuil Hall; Richmond, Virginia, designed by Thomas Jefferson after the Maison Carrée at Nimes, France, the scene of Aaron Burr's treason trial and later the meeting place of the Confederate Congress; the old Palace of Governors, Santa Fe, New Mexico, the oldest seat of government in the United States, first used by the Spanish in 1609, later as a territorial and state capitol by the Americans until 1909, when a new capitol was built and the Palace became a museum; Helena, Montana, faced with native granite and containing historic murals by the great self-taught cowboy artist, Charles Russell.

Hundreds of factories are open to visitors, too. Among the best are the Corning Glass Center, Corning, New York; Hershey Chocolate Corporation, Hershey, Pennsylvania; the world's largest granite quarry, Rock of Ages, Granitewood, Vermont; the country's largest raw sugar plant, Clewiston, Florida, and the automobile plants at Detroit, Michigan. Lumber and paper mills

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in many locations offer free guided tours showing the transformation of wood into products used in daily living. Some plant tours end with a gift or sample to their visitors, which you can add to your souvenir collection.

Souvenir shopping is part of almost everybody's trip. Unfortunately, millions of dollars are spent on useless trinkets. Yet shopping can add a new perspective to travel when you seek out products that genuinely represent the area you are visiting. They may be handicrafts of the

Southern Highlands, authentic jewelry or pottery of the Indian Southwest, or such foodstuffs as Wisconsin cheese and California brandied figs. They will recall the pleasures of your trip whenever you use them.

All these elements add to the meaningful pursuit of leisure. They may require planning, but even that can be fun. And at a time when mobility is becoming a prevalent part of summer life in America, the art of touring is a need on the national scene, as well as a joy to those who share it.

Chasing the Rainbow

(From page 17)

we were fortunate in joining a party destined for Crater Lake. We had made reservations weeks earlier for guide and lodgings at the Crater for June 15th, the opening date.

It was too early as yet for many of the several lakes and streams north on 97 which we wanted to visit. Highway 97 bisects the state from Klamath Falls to the Dalles, and this route contains many of the best fishing sites—Upper Klamath Lake, Crater Lake National Park, Tumalo Falls, the Cove Palisades, and others. And if you want to approach the Cascades closer there are Suttle, Todd, Three Creeks, Odell, Crescent, and Diamond Lakes right in the lap, so to speak, of the Cascades.

In the several streams feeding Crater Lake we had an excellent chance to sort through our accouterment during our preconditioning period before we struck out for the Rogue. We each carried a complete spinning outfit and fly outfit, plus an extra spinning reel of the interchangeable enclosed type. Besides both wet and dry flies we had an assortment between us of flash baits and small plugs, as well as salmon eggs, plenty of monofilament line, hooks, split shot, etc. We decided to rely upon our snug down-filled sleeping bags, plus light tarps for each. The rule was to use the lightest possible tackle with the lightest load of gear and provisions.

Our guide, Ike English, met us at the pier at Crater Lake with his own provisions packed away in a sturdy outboard canoe. The fresh, clean June air contained elements of expectancy as we purred tentatively westward from the lake along a water-course bounded by the most exquisite scenery we had seen west of the Mississippi.

We fished at a likely place to secure some pan fish for supper, for it

was approaching sundown and we had only an hour after sundown to meet the need—Oregon law. We came in by paddle to a mud bank just below a mild cascade of stream over a few large rocks. I selected a deep pocket and Sid moved downstream to an undercut ledge. I mounted a stonefly nymph and tossed my offering just beyond the path of drift. My bait was traveling fast and shallow, so I reeled in for another try for depth riding slow. This time it worked—something struck my fly, but wheeled away before I was set to take him. I was using a sinking fly line with medium hooks without lead. The Montana nymph pattern was all right if I could get it down deeper. This I did, by attaching a bit of lead. This time I missed and changed after several more tries to the Quill Gordon. I used a bit of finesse with the Gordon and caught a quick glimpse of the "brookie" when he hit and snared himself—a nice eatable 12-inch. I subsequently caught two more on the same lure, and Sid brought in two more "brookies" which were well over 12 inches. We had our supper of the tastiest trout which is known, then we all agreed to stay where we were for the night. It was a campsite which offered running spring water and ideal shower facilities under a shelf of rock. Since the night was clear and cool we were not concerned with the need for cover.

At sun-up the next day I was back at the stream. I spotted some "brookies" nonchalantly finning against the pull of the current within a hollow pocket in the bed of the stream. I presented my fly casually. But I was mistaken, for they were not "brookies" but rainbows—three beautiful lunkers, who finned along indifferently ignorant of my presence, it seemed. But again I was

mistaken, for they did know I was there—but these were hungry trout as well as wary. They were interested but flashed away just short of my attractive offering. It was plain that these remote trout did possess greater selectivity and were much wiser than advertised. There was no room for trial-and-error angling here. I studied the situation from every angle. The light factor, depth of water, and current favored the use of my spinning rod with a small wobbler, which had the action of a small minnow in erratic flight—and time was required for the fish to forget my presence. I returned to our camp-site for the gear I wanted. I worked this lure slowly but with enticing action, casting beyond the path of drift and coaxing it over the deep spot where I knew the fish were. When my strike came I was ready for it and waited a few seconds before setting my hook. I landed a glistening beauty, with Sid standing by hungrily with his net to assist. A few moments later, using the same technique, I caught another 15-inch from the same hole.

Sid tried floating a cluster of salmon eggs just below this spot, so that his bait would tumble in behind a large boulder which had created an inviting pocket below the swirl of the current. As his offering drifted over the hole something terrific arrowed up—and then struck out downstream. Sid followed, as best he could, in the wake of his fish. For 300 yards he scrambled along in ankle-deep water—until he plowed into a drop of two feet or more! He found that his rainbow had beached himself upon a shallow sand bar. This fellow weighed over four pounds and was every inch a veteran of his fighting clan.

Through intermittent paddling and outboard travel, plus some hard walking, we made it to the Rogue's tail before noon. We were hungry but in fair-to-middling spirits, for the rather difficult travel had convinced us both there was still a bit of steel in our half-century-old mechanisms.

We had come to a fork which seemed familiar to Sid. "Now, suppose we make this bend here and take the south fork up-river for a piece," he directed.

Ike cut in towards a sand-bank lined with birch, spruce, and a few scrub oaks. We jumped ashore to straighten our legs. Ike stowed the paddles and tied our canoe momentarily to a scrub oak root. On a patch of high ground we had our lunch delicatessen style, with a few cans of beer to wash it down. We filled our

pipes and got the outboard going.

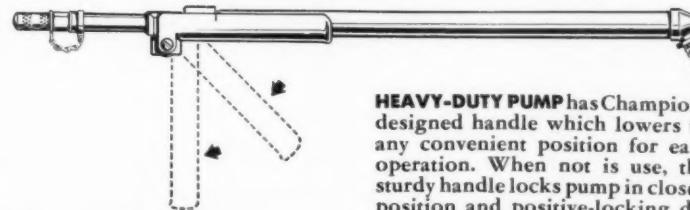
We plowed along at a pretty good clip against the current, and I think I can say that we had the whole stream to ourselves for easily twenty miles of navigable stream. Sid picked up landmarks as we slugged along the watercourse, which grew more rugged by the moment. There was a clearing with what appeared to be an old lumber shack on the south bank just ahead.

"Let's pull in where you see that clearing," Sid directed our guide in some excitement. A minor stream joined the south fork of the river a few hundred feet this side of the

shack. "Boys," he said, "if I may use a figure of speech, there—just a ways up that creek—is the end of the rainbow! I suggest that we look around a bit here." Our canoe coasted in towards the bank, and when she touched Sid jumped eagerly ashore. "Right over there was where the sign was nailed up between two pine trees—but I see that even the trees are gone."

Almost as soon as we had touched the river bank it began to rain, so we pulled our canoe up on high ground near the shack and quickly unloaded our gear and provisions and detached the motor. Then, after

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turning our canoe bottom up, we carried everything into the shack. Luckily the roof was not in too bad repair, but the whole interior was filthy.

Sid got busy building a fire in the broken-down pot-bellied stove and with the natural assumption that water would be needed for java, I grabbed our collapsible bucket and went in search of a spring. I found one back of the shack among some rocks. While I was returning to the shack, the rain ceased almost as abruptly as it began. We had a pot of coffee brewing very soon.

Eager for action, I said: "I doubt if the rain has roiled the water too much for fishing. What do you say we try the stream before the sun gets too low?"

"We sure will, pardner!" Sid replied. "What do you think we came out here for?" And so, the matter was settled just like that. We finished our java and began gathering the lightest tackle we had. Ike went to work on his outboard motor.

We pulled on our waders for the first time. Each of us carried a fly outfit and not much else. Sid pocketed a small box of assorted flies in place of the camera in his vest.

The creek bed was quite shallow; for some way up we encountered very few rocks which were bothersome, but the water was cold—probably 45 degrees. We saw small trout on several occasions, but as yet the water was too shallow for the fish we wanted. The creek seemed to be bending towards the south, there was a shoulder ahead which looked interesting, and the water was deepening. If there were fish there at the shoulder we didn't want to chance scaring them away, so we entered a thicket of evergreens and moved up behind the shoulder as quietly as we could. What we saw caused both of us to go into action at once. Sid moved up about ten feet and tossed a dry fly into a spot of blue not more than ten feet across. I used the Dobson nymph pattern because of its dark coloring, for the water was slightly discolored, and reached for the deep water near the opposite

bank. I was rewarded by a tugging jolt and a flash of color as my rainbow broke water. I played him with all my skill to keep him up above water as much as possible. He spanked the surface time and time again before he agreed to come my way—just a little way—and then he was off again. I walked in to net this fellow, who scaled a golden six and a half pounds. Yes, I said golden—for he was pure gold, except along the back, which was brown. He differed from the brown trout in that he sported a scarlet stripe along the sides. Plainly, he was more rainbow than brown.

If we had been interested in chinooks or Pacific Salmon, we probably would have followed the Rogue down to the sea, but since Ike agreed to make the trip north with us we arranged for trailer and transportation to Diamond Lake. This lake lies at the headwaters of the North Umpqua and is in plain view of the Cascade Mountains. We captured silversides and brook trout here and moved on to Odell Lake, which is open to fishing a bit earlier than lakes further north in the Cascades. Three Creeks, within sight of Mt. Jefferson, is closed to the use of motor boats, but we fished this lake on the Metolius River using our waders and had our limit for the day.

At Tumalo Falls, in the Deschutes River near Bend, Oregon, we found sky-jumping rainbows. They were particularly lively in the stream below the falls, where we used our tin lures for the first time with good results. At the Cove Palisades State Park near Madras, a geologic wonder site, we fished both the Deschutes and the Crooked Rivers, which came together at this point within sight of the distant Mt. Jefferson, and we caught our limit here of scrapping redsides.

In just one week of action-packed days we had conquered the Cascades—the devil's own hills of hell and high water. The roaring rivers, the rough-and-tumble snow-fed streams, the placid alpine lakes, the majestic grandeur of snow-clad mountains—the atmosphere—had made us young again.

Smokejumping Under the Midnight Sun

(From page 16)

near good fishing streams. Purely as a matter of research, the men would occasionally wet a line to see whether the Arctic greyling, rainbow trout, or Arctic shee fish actually attacked a man (as we were told by

some of the sourdoughs) and whether they could be used to supplement the discouraging sameness of the "C" rations. We found them excellent eating—large but not vicious.

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nobile fire unit, which can operate independent of landing fields, roads, and lakes. It has proven to be a highly successful operation, but it's too small!

At least 80 per cent of the 49th state has been burned over. Much of this waste of natural resources can be prevented if the use of modern aerial attack methods is increased. This means that better detection methods will be needed, better communications, a larger basic fire organization, and certainly an increase in the size of the smoke-jumper contingent. Sixteen men spread awfully thin when there are

225 million acres involved.

At the end of the season 166 jumps had been made on 35 fires, but on one day in June there were 70 fires burning on BLM lands in Alaska. There were 538 emergency firefighters and 31 permanent personnel on 23 of those fires, but 47 remained unmanned and uncontrolled.

Many of the original 16 smoke-jumpers plan to return north again next summer. They hope with additional aid and reinforcements to hasten the day when wild fires no longer tarnish the wonderful Alaska summers.

Wonders of a "Worthless Tree"

(From page 36)

trees, and working up to the largest, we will prune with the idea in mind of providing at least 500 trees per year to the Christmas tree market. We have already sheared a number of experimentals which should tell us something about the extent of shearing which will be necessary. We can afford to lose some trees in such a way, because the research information gained will pay us a multiple dividend in future operations.

One unusual experiment was begun this spring, the fertilization of plots of Virginia pine. Not only do we hope to incite growth, but we have been told that the hue of the trees can be enhanced from yellow-green to bluish green through fertilization. Since we are not certain, the operation will begin on a small scale and gradually increase until all trees will be treated, providing the results are satisfactory.

In delving into the aspects of marketing a product that seems to lack public demand, we chanced upon a potential that has been virtually untapped in West Virginia. Actually, the potential is an old one which has lain dormant since modern civilization began taking its toll of country customs. This potential lay among those hardy souls who loved to get out into the country at Christmas time and cut their own trees.

This aspect of marketing should have come to me first of all, since all my life I have envied those men on the *Saturday Evening Post* covers who were out in the snow with their families cutting the family Christmas tree. However, because this phase was so close to me, I had completely overlooked it until a friend of mine called to request permission to take his children out to cut their own tree. From this small begin-

ning, no less than a dozen of his friends also called; all of them headed for our Putnam County farm to harvest their own trees, and they loved it. Some traveled more than 40 miles, paid the man on our farm \$1.00 each, and spent half a day selecting and cutting their trees. It probably cost them as much as \$5.00 in gasoline and tree costs to obtain a tree they could have bought on any nearby lot for \$1.50. Yet, as one friend told me later, "My boy wouldn't have any other kind of tree from now on." He thought he got a bargain, and I am not one to argue the point.

Having a product that other people want and must normally pay for has many compensations other than direct financial gain. In our case, we have already traded these "worthless" pines to a man in lieu of rent for a day's use of his trailer. We have also repaid our neighbors for efforts in our behalf by providing them with free, "home cut" Christmas trees. We helped make a new neighbor feel "at home" by presenting him with a tree on the day he moved into our neighborhood, since pressing moving problems had made buying a tree more of a chore than a pleasure. All of these things must be considered on the credit side of the ledger when one goes figuring the "costs" and "income" involved in forest-land enterprises.

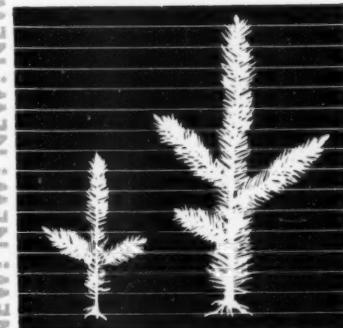
During the next six years, we expect the Virginia pine to "take care of us," and it seems only fair that we in return take care of it. Planting of trees is expensive and laborious. Why, then, should we consider destruction of one tree to make room for another, when nature has already done the planting?

We are not foolish enough to be-

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lieve that we will ever be in position to demand the price on Virginia pine that is realized in the plantation-type trees. That is not our purpose. There will always be a market for a nice, fairly well shaped, and inexpensive tree, and that is what we will have to offer. Trimming up the native stock and cultivating the trees as if they were planted by hand is somewhat like culturing the lawn around the house. It may not increase the price of the property, but it will improve the chances for selling it at all.

Tree Farming

(From page 30)

full-time, most Tree Farmers are small businessmen and proud of it. They embody every aspect of the old-fashioned, free-enterprise system and, instead of dying out, they have just begun to grow.

The farmer, because of his close proximity to the woods, naturally comprises a large part of the Tree Farmer population but by no means all of it. There is no typical Tree Farmer today. They come from all walks of life. Some are retired people. Some are college students, ministers, bankers, lawyers, nurses, oil field workers—representing every occupation one can name.

Pearl Buck, for example, is a famous authoress but is also Vermont Tree Farmer No. 53. Columnist George E. Sokolsky is Massachusetts Tree Farmer No. 109, and Rockwell Kent, noted artist, owns a 131-acre Tree Farm in New York. Others include former Gov. Allan Shivers of Texas, Naturalist W. D. Burden of Vermont, and Clifford J. Backstrand, head of Armstrong Cork Company, to name but a few.

As important as these names are, however, they are not cherished by the Tree Farm organization any more than, say, the name of Leroy Travis of Bastrop, Louisiana, who symbolizes the free enterprise spirit of America. All by himself, he: 1) selected his trees for cutting, 2) harvested them, 3) sawed them into lumber, and 4) built his own house with the lumber.

What? You question the item about sawing up his own lumber all by himself? Well, he did just that—on a one-man peckerwood sawmill, the remains of which are still lying near his home. He admits that it was trying at times: he had to operate the control stick, slice a board off, stop the operation, run and kick

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REMEMBER: It takes time to build full immunity. So order Aqua Ivy Tablets now, before the poison plant season starts. Available through your regular drug channels in the United States and Canada.

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\$230 from Ketchum (Sun Valley), Idaho
Party limited to 25

WIND RIVER MOUNTAINS, BRIDGER WILDERNESS, WYOMING

JULY 25 TO AUGUST 5; AUGUST 15 TO
AUGUST 26
\$250 from Pinedale, Wyoming
Party limited to 25

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JULY 29 TO AUGUST 8; AUGUST 9 TO
AUGUST 19
\$230 from Glenwood Springs, Colorado
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YELLOWSTONE NATIONAL PARK, WYOMING

AUGUST 8 TO AUGUST 19
\$250 from Moran, Wyoming
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AUGUST 16 TO AUGUST 26; AUGUST 30 TO
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\$230 from Durango, Colorado
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AUGUST 22 TO SEPTEMBER 2
\$250 from Moran, Wyoming
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the board off the platform, and then return to the controls to saw the next board. And not only did he saw enough lumber for his own use, but he furnished the same service for his neighbors in the process. Before he built his house, however, he sent the boards to a mill for planing and drying. His home, consisting of 1200 square feet of solid frame construction, stands as a model of what a man can do when he has to or wants to.

Travis says he didn't always have such an independent nature, but reckons he acquired it after serving in the Army Air Force, where he spent four years in World War II. "When I got back out of the chow lines and other forms of regimentation," he said, "I guess I was just determined to be independent from then on!"

Forest industry feels that by recognizing landowners publicly (every one of Louisiana's 1000 Tree Farms was dedicated at public ceremony) for conducting proper forestry practices on their lands, they will encourage other forest landowners to follow suit. They must be right, because there is now a sizeable waiting list of landowners to become certified Tree Farmers.

But the Tree Farm program is by no means the only effort made by forest industry to promote better forestry practices among the small landowners. Many companies in the South—including sawmills and pulp mills—are promoting what is known as Tree Farm Families. Under this program, a landowner can assure full production of his forest free of charge by entering into an agreement with the company. In return for the management service, the landowner agrees to sell his future wood products to the company at a fair market price.

One of the most ambitious projects ever undertaken was the establishment of more than 90 "Pilot Forests" across the South last year by member mills of the Southern Pulpwood Conservation Association. Part of a permanent educational program, the Pilot Forests average 85 acres in size and encompass more than 7500 acres of forestland.

"In setting up these Pilot Forests on privately owned tracts," said H. J. Malsberger, general manager of the association, "the pulp and paper industry has agreed to do a complete initial forestry job designed to bring the property into full production. This work will include planting seedlings, control-

ing weed trees, harvesting scientifically, establishing fire control measures, and other required practices. The owner of the land will receive all proceeds from timber harvests."

All of these programs are helping to insure our future forest crop—to help meet the deadline of the year 2000, when demand for forest products is expected to zoom from the launching pad and rocket upward to an unknown peak. Then, as now, a good gauge of our progress will be the Tree Farm program. At present, one-sixth of the private forestland owned by individuals in the United States (50 million acres) is qualified as a Tree Farm. When 200 million acres—or two-thirds of the total—are qualified, then we'll know we've got the problem licked.

Prehistoric "Shangri-La"

(From page 25)

goods, ice cream—even gas and tire repairs. No supermarket this—you're even waited on! This, to some teenagers, would seem to clinch the authenticity of this prehistoric place.

Non-camping tourists can also obtain accommodations in the park, May 15 to October 15. For advance reservations, write the Mesa Verde Company, Mesa Verde National Park, Colorado, or telephone Mancos 3651. You may also call from the park entrance, using free telephone service 19 miles up to Spruce Tree Lodge, to learn in advance whether accommodations are available.

A room in a tent-cabin or cottage, with hotel-type furnishings and service, is \$3.75 single; small room without bath, \$4.25; with bath, \$6.25. Large room "with": \$8.25. Double-bed accommodations range from \$5.00 to \$8.75; twin-bed accommodations in the tent-cabins cost from \$6.00 to \$10.50. Additional beds in the small or large rooms are \$1.25 and \$2.50, respectively, with cots provided at \$1.00 each. Cabins for housekeeping are likewise available at \$7.50 to \$10.50 for two persons, plus \$1.00 per entire party for use of kitchen and dining-room equipment, refrigerator, gas fuel, etc. Advance reservations are also made for two-room cabins for three to seven persons. Parents with small children get a break when lodging at Mesa Verde. Tots under three may sleep free with mom and dad, or share a bed with an older relative. Otherwise, the room rate is



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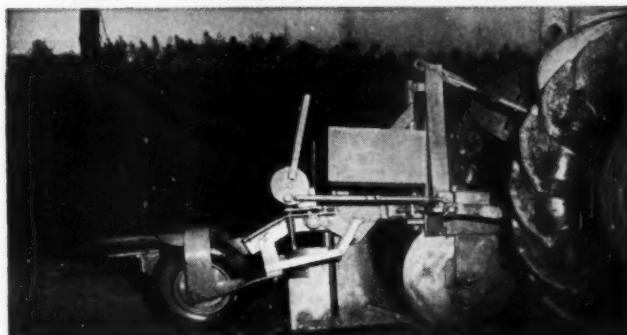
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Hungry? Thirsty? No need to forage further than the Coffee Shop (*not* Shoppe, as in the effete East!) at the Spruce Tree Lodge. Good meals are served at moderate prices. For instance, club breakfasts, 65¢ to \$1.75; lunches, a la carte; dinners, complete, \$1.95 to \$3.50. Although the high altitude evidently does not affect the prices, the management does note that "all rates are subject to change." Oh, yes—at the Lodge there is also a Sipapu, or bar, which is said to be "well hidden, but may be located by diligent explorers."

The next stop is the gift center for films, souvenirs, and picture postcards for the folks back home. Nearby, Navajo rug weavers and silversmiths ply their trades, producing custom-made wares while their customers stand around, fascinated.

High on the mesa and to the north, at an altitude of almost 9,000 feet, at Park Point Lookout, sightseers watch the canyon walls and the La Plata Mountains, the desert areas in the adjoining states of New Mexico, Arizona, and Utah—all changing color with each passing moment of sunlight.

We shift our attention to the group of wise parents who are "checking" their tots with a babysitting service carrying the western handle of "Kids' Corral." This well-equipped play yard for small fry aged 2 to 7 is maintained from 8 a.m. to 6 p.m. daily. Experienced nursery school personnel are paid 35¢ an hour to care for children, while parents visit the museum and the ruins.

The Natural History Museum is a handsome structure of Spanish-type adobe, with round-log beams protruding from beneath the eaves of the terra-cotta roof. Here, also,

are park headquarters—the center of activities for the area.

Tourists wander leisurely from case to case in the museum, beginning with five lighted dioramas. These depict, in miniature, the Indian life on and around Mesa Verde from 1 to 1300 A.D. The little figures are seen hunting in the canyons, tilling the soil atop the mesa, at work and play amid color-spotted scenery. They scamper fearlessly along tree-and-rock-strewn cliffsides, up, toward, into, and around the adobe structures built under the rims of the cliffs or tucked between rock clefts.

From the dioramas, tourists progress to the cases containing mummies, skeletons, skulls, and other grisly remains of the early Mesa Verdians. Their products, also preserved by the dry climate or by burial in the earth or in trash heaps, have been recovered for display. Here are turkey feather robes, clothing and shoes made from the yucca plant, and jewelry of seeds and seashells obtained by bartering with friendly Indians to the south and west.

Other artifacts, such as hunting and construction tools of stone, baskets woven from yucca and dyed in vivid colors, pottery artistically made and decorated, fill more display cases. Finally, one case displays the items which all the Indians of North and South America first used—including turkeys, corn, beans, squash, potatoes (sweet and white), maple sugar, peanuts, chewing gum, chocolate, cocoa, coffee, tobacco, rubber, cocaine, and numerous other drugs and herbs.

The accomplishments of these primitive folk are not only impressive but humbling to the tourists by the time they start moving down the steep rocky path leading to the Spruce Tree House. In the group

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following the neatly uniformed park ranger is a modern Pueblo Indian family from New Mexico. After 35 generations, these people are visiting the homes left by their ancestors during the great drought which lasted 24 years, between 1276 and 1299 A.D.

The modern squaws wear colorful clothing; the earring bucks wear a mixture of blue denims, colored shirts, windbreakers, and sombreros. One squaw carries a sleeping papoose in a backpack. The board against the back of the infant's head is identical to the type seen in the museum showcase only a few minutes before!

A photographer near us asks to take a picture of the sleeping papoose. The squaw hesitates, but her husband warns off the tourist. "One dollar," he demands, "then you take. One dollar." He raises one finger, in translation. The cameraman is taken aback, but he hands over the money before snapping his shutter.

The young historian, meanwhile, has reached the ruins and is politely, but firmly, warning youngsters against dodging in and out of the T-shaped wall openings, or hiding in the dark caves. Most of the other tourists stand around, almost reverently, as the guide—an archeology major at college—explains how wind and water erosion created the caves eons ago and how the Indians constructed the walls of their homes, using sun-dried bricks, cement, and trees as protective fortresses against marauders.

A narrow plaza or meeting place fronted the Indian's multi-family apartment houses. The larger ruins, like Cliff Palace, sheltered about 400 in a great cave in which was constructed a 200-room "apartment house" 3 to 4 stories high. Here, the plaza was punctuated by 23 underground "kivas" or ceremonial rooms reserved for men only. Descent by ladder into one kiva reveals a shelf for religious or ceremonial articles, a fireplace, and a small hole in the floor, to permit the underground spirits to come and go more freely.

The historian explains that the Indians used the plazas as an area for heaping trash or for burying the dead, together with all the ceremonial objects required for their journeys to the next world. Unwittingly, the Indians were placing these treasures in "safety vaults" for white men to discover 700 years later.

What was the general appearance of the Mesa Verde people?

Typically Indian, rather short and stocky. The men averaged about 5 feet 4 inches in height, the women about 5 feet. Their skin color was light to dark brown; some were almost black. Eyes were brown; hair varied from dark brown to deep, lustrous black. Clothing was scanty in summer; some women wore small string aprons, on occasion. But fur and skin robes and sandals of yucca fibers were commonplace, especially in cold weather.

Living communal lives, their clans were matrilineal, with property descending down the female line, so a man would farm the land belonging to his wife's people. Since women ruled the roost, more or less, men sought refuge or masculine companionship in the kivas, where women were completely "off limits." When the kivas required repairs outdoors or needed whitewash on the walls, however . . . then the women were welcome.

The weapons used by the Mesa Verdians progressed from the atlatl, an odd spear-throwing device together with a short, curved stick for clubbing, to the bows and arrows of later centuries.

A guided tour through another ruin, the Balcony House, is an unforgettable experience. A trudge up a rocky trail, a warning by the ranger that persons suffering from heart and respiratory troubles and



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those subject to acrophobia should remain on the trail, and then most of us are climbing to dizzy heights on a crude log ladder — up to the awesome ruins overhead. The ancient Indians used similar ladders or hung ropes over the cliff-sides, to gain access to their homes after farming or hunting atop the mesa.

We clamber over the balcony ledge, then go down on hands and knees to crawl through a tiny tunnel, to reach the plaza. At this point the defenders would quickly dispatch their crawling attackers by clubbing their heads. The tunnel was a corking good way, too, to separate the lean from the fat citizens.

Every evening, almost everyone on Mesa Verde attends the campfire lecture. A large semicircular amphitheater of stone and wood seats faces the canyons and desertland of New Mexico far below and to the south. The dancing flames of a huge bonfire light up the area, challenging the last rays of the sun as they tint the canyon walls red, orange, and purple.

Young and old crowd the seats, while the historian recites the Mesa Verde story. Each night, a different lecture discloses more about the Indians, their lives, their diseases, their legacies to the white men.

One ranger will recite how the Indians suffered rheumatism and sinusitis, contracted in the damp caves. Or arthritis of the neck bones and joints. Or how X-rays of some exhumed skeletons revealed other crippling diseases. Since the diet of the Indians was chiefly maize or corn ground in stone or clay vessels, the meal picked up much abrasive material. This ground down the Indians' teeth — often to the gums, causing abscesses and great pain. Coupled with toothaches, then, they also must have had some awful tummyaches.

They had their "crimes of passion" too, according to another ranger-lecturer the following night. Dramatically, he reconstructed an ancient and tragic love story from the crushed-in skull of a young maiden. Still another scientist-lecturer-ranger will describe how radioactive isotopes are employed to

determine the ages of the various human remains and artifacts discovered in and around the ruins. And at another campfire event, a historian will point out that Indians taught many things to white men; among them the rituals used by our lodges and secret societies and the use of snowshoes and canoes. Half the United States, hundreds of our mountains, rivers, cities, and towns bear Indian names. We even owe them for such expressions as "happy hunting grounds," "going on the warpath," and "burying the hatchet," to say nothing of the considerable atmosphere they create for cowboy movies on TV.

In the flickering light of burning logs, Navajo Indians from the reservation shuffle around in the circles and odd formations of a medicine dance. The silence is punctuated by their guttural moans, grunts, and chants. They wear native costumes, complete with colored headbands and jangling silver belts around their waists. The eerie sounds and the wavering shadows created by the campfire endow the scene with a ghostlike quality which must have proved hypnotic to superstitious Indians a millennium ago.

Later, the historian leads the audience in campfire singing. He asks, finally, that everyone keep singing while leaving for the lodge, tent-cabin, or camping grounds.

The lights flit over rocks and gnarled tree branches, crooked like pouncing arms and hands. And soon, in the enfolding darkness and the growing stillness atop Mesa Verde, the past and the present meet in brooding, chilling silence on the mesa's rim—with the full moon floating over the empty canyons...

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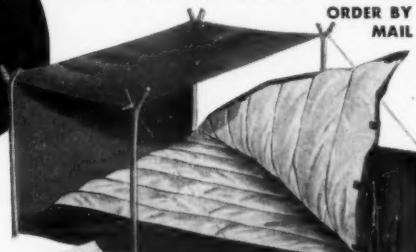
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Reading About Resources

(From page 31)

portant facts, she has described more than 150 such efforts that were successful only because citizens informed themselves concerning the natural values near at hand, and managed effectively to preserve these values, not for themselves alone, but for all Americans. These community projects are a part of the face of the nation, and we are a richer people because of the beauty and the wilderness, here and there, that has been saved by devotion and hard work.

Every garden club, every luncheon or service club, every local library, should own a copy of **This Land of Ours**, and make certain it is read. Mrs. Hubbard can carry on from here, for she guides and stimulates in a way that is sure to result in new acquisitions of choice and lovely virgin land, or in the preservation of the beauty of land not suited for public ownership, or in the maintenance of proper conservation practices.

Another approach to the challenge of community conservation is persuasively argued in an attractive booklet, **Securing Open Space for Urban America: Conservation Easements**, published as Technical Bulletin 36 by the Urban Land Institute (1200 18th St., N. W. Washington 6, D. C.).

Written by William H. Whyte, Jr., of **The Organization Man** fame, the result is ammunition for any civic group that is aroused by the waste and ruin of "urban sprawl," and which seeks some practical means of preserving green areas around their communities.

An easement is described as an extension of the right of eminent domain. Public departments contract with private landowners for the purchase of their right to develop in undesirable ways, leaving in private ownership title to this land, and the right to reasonable, suitable development or use.

City planners, zoning officers, men-about-their-communities, are virtually obligated to study and digest Whyte's material. There are tools here that a progressive city cannot do without. And this booklet should be purchased as a companion-piece to Mrs. Hubbard's **This Land of Ours**. Together, they offer us means of adding immeasurably to the pleasantness of modern life.

Among other recent books re-

ceived are a group concerned with grasses:

The Grasses, Earth's Green Wealth, by Alma Chesnut Moore. (The Macmillan Co., N. Y. 1960.) A "popular," very readable account of the origins and history of all grains in the entire grass family. Very interesting.

Soil, Grass and Cancer, by Andre Voisin. (Philosophical Library, N. Y. 1959.) The health of both animals and men is examined in terms of the soil's mineral content, and its

effect on the nutritional strength of grasses.

Grass Productivity, by Andre Voisin. (Philosophical Library, N. Y. 1959.) A treatise on the role and use of grass in animal production. Technical.

Grounds Maintenance Handbook, by H. S. Conover. (F. W. Dodge Corp., N. Y. n.d. Second edition.) Unique study of public and semi-public grounds care, with important material on grasses and turf. Specialized.

Buffalo Bill's Top Hand

(From page 37)

country, is the tale of his wild ride up and down the main street of a remote cow town—horse hair flying in all directions—all because, having journeyed West to settle a range dispute, he "showed up in store clothes" and, as a quite typical practical joke, was given an unbroken bronc for the short range ride. Finishing the 5-minute Madison Square Garden "repeat performance"—with borrowed spurs tied on his low shoes with a piece of rope—he pulled up before the flabbergasted onlookers and blandly asked: "Gentlemen, where is this piece of range we're goin' to look over?" The ride was short! It's easy to see why he enjoyed the lifelong friendship of a host of stockmen who recognized his capability and respected his firm leadership and fairness in applying grazing regulations aimed at maintaining satisfactory supplies of "grass."

Although Nelson's specialty was grazing, he worked hard not only to improve range conditions for both livestock and wildlife, but also to harmonize grazing with timber growing, watershed protection, and the various other uses of forest and wild lands—regardless of ownership. And especially noteworthy is his enthusiastic support of the technical man

in wildland administration as well as research. He will be remembered by many a young forester for his sound counsel and encouragement.

Nelson rounded out his unique career as Superintendent of the San Joaquin Experimental Range, center of field studies and tests of foot-hill range management, set up by the California Forest and Range Experiment Station in co-operation with the University of California. This tough assignment—to him just another eagerly-accepted challenge—was apparently his most satisfying one. At least, so I have recently been told by the girl who, early in Nelson's career, said "I do" and started housekeeping in a cabin "chopped out of a Wyoming lodgepole thicket." The Experimental Range, with its staff of federal and state technicians, its local advisory board of neighbors, and its flow of visitors (school and college classes, land managers, local "show me" groups, and scientists from all over the world) afforded ample opportunity for exercise of his talents for enlisting co-operation between industry and fact-finding groups, for co-ordinating inter-agency research, and for telling, on the ground, the story of sound range and wildlife management.

Meeting of Minds Sought on H. R. 10465

(From page 6)

Association of Manufacturers expressed doubts about the wording of the multiple use bills now before the House subcommittee. The association said the bills are in need of substantial amendment to make clear that they are not to be misconstrued as "impairing the basic purpose of maintaining a continuous supply of timber." While multiple use management practices should be followed on the forests, the NAM

stressed that more than 60 years' experience in national forests management has proved the soundness of the statement of purposes and objectives adopted by the Congress in 1897.

Meanwhile, AFA members themselves were beginning to interest themselves in the discussion and there have been more requests than usual for back copies of proceedings of old Forest Congresses, bills, and

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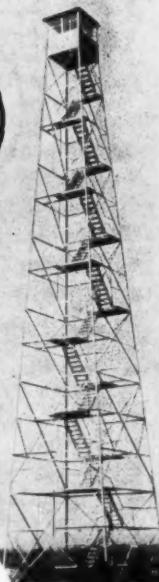
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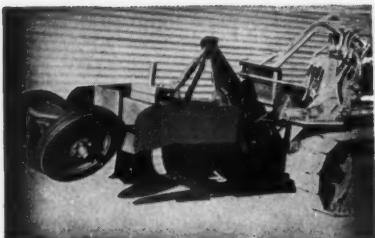
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other documents. One member said he could see no great difference in National Lumber's apparent position from that of Howard Stagner, of the National Park Service, in his article in AMERICAN FORESTS in February. "Both seem to be saying that land should be managed on the basis of primary uses by qualified experts," he said. An effort to pursue this thought at Interior was not too fruitful, however, soliciting only broad smiles and "no comments."

Another AFA member said it seemed to him that National Lumber was overlooking one "very important fact which is that this is 1960 and not 1897, and that recent years have seen many new developments on the national forests, particularly recreation pressures that must be met somehow."

Still another member asked, "In the event of some future reorganization or regrouping of resources agencies, wouldn't it be difficult to decide just what to do with the forestry groups if the Forest Service was conducting a program which gives all land uses equal status instead of having forest and water management as the prime purposes?"

Another comment was, "I think it is a good thing to give the grazing people Congressional recognition, and it might result in much-improved administrative relations compared to the past."

Still another comment was, "I am glad to see the Forest Service making a real effort to give all the uses of land, and especially recreation, a more conspicuous place in the sun. This should help to quiet those recreationists who have been saying that the Forest Service is more interested in producing wood than it is in recreational activities."

Another comment was, "AMERICAN FORESTS has described the lumber campaign and its fine slogan, 'There Is Nothing in the World Like Wood.' But shouldn't the lumber people support this new recreation bill so that people won't start saying, 'There Is Nothing in the World But Wood.' All these uses should have a fair part on the national forests."

A final comment was, "I am glad to see the AFA supporting this bill. This should be a fine thing both for recreation and wilderness experiences. The bill is a solid indication that national forest administrators are concerned with the more intangible values as well as the commercial values."

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The Carob Crusade

(From page 19)

spreads, pie fillings, and mustard. Textile mills depend on carob gum in the process of sizing cotton cloth. Producers of cosmetics, paper, photographic film, matches, paints, inks, polishes, ceramics, adhesives, boiler compounds, and oil field drilling mud are among the other manufacturers that find this gum invaluable. Dr. Rittenhouse and Dr. Coit point out that the growing need for tragacanth, now obtainable exclusively in Europe, is another of the reasons California growers are beginning to take a second look at the carob tree.

The carob is unique if for no other reason than its prodigious offerings of pods and seeds, but being a natural show-off of the plant world, it puts its tenacious roots to good use also. With thousands of tons of irreplaceable soil needlessly lost each year through lack of conservation practices, our government now offers financial and supervisory help to land-owners practicing an approved conservation program such as carob culture affords. Dr. Coit explains, "The remarkably vigorous root system of the carob serves as a natural soil binder, and when planted fifty trees to the acre in proper locations, with correct contouring and a minimum of care, they give unsurpassed dry-land erosion control."

Dr. Rittenhouse, a slender, white-haired philanthropist, first became carob-conscious 14 years ago while traveling in the Mediterranean countries. He immediately spotted the similarity between the Mediterranean climate and topography and much of southern California's slowly but steadily-eroding foothill sections. Here, he thought, would be perfect locations for orchards of soil-saving, crop-bearing carob trees.

Through the University of California at Berkeley, Dr. Rittenhouse tracked down Dr. Coit, now a consulting horticulturist, whose interest in carobs dated back to his subtropical pomology teaching days in 1919. Their subsequent carob discussions ultimately inspired Dr. Rittenhouse to provide funds for the eleven-acre demonstration plot, to operate over a 30-year period as a public service.

The two painstaking doctors purposely hunted for unirrigated land suffering the first pangs of erosion,

representative of dry-farmed areas in southern California. At the inception of the orchard in March, 1949, four of the 11 acres were planted with small carob seedlings. These youngsters provided rootstock to receive the budwood that eventually controls tree and pod characteristics. The remaining ground was put in reserve for future experimenting.

All the demonstration trees are now budded to the best carob varieties obtainable. Dr. Coit says, "Seedling carobs, such as have been thriving about 100 years as ornamentals from Santa Barbara to the Mexican border, generally bear fruit of inferior quality."

The doctors wholeheartedly agree with their extensive collection of European carob publications that show this carefree tree is undemanding, to say the least: it will tolerate several degrees more cold than oranges, basks in intense heat, laughs at insects and disease, demands no fertilizer, performs well on many types of soil, requires very little pruning, and can, if necessary, survive several seasons of drought. Profitable crops, however, are the result of at least 14 inches of rain per season. In dry, desert areas, trees will bear with one or two irrigations a summer—totaling about half the water required by other tree crops.

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Knowing there were hundreds of select European carobs he might never otherwise have access to, Dr. Coit spent eight enlightening weeks in the Mediterranean countries in 1954. "It was a regular 'carob grower's holiday,'" he laughs. "I tramped over countless rocky hillsides ferreting out promising species, named trees for new budwood, almost wore my glasses out reading carob information, talked with every carob connoisseur I could corner . . . and loved every minute of it!"

With the acquisition of foreign stock, the Rittenhouse orchard now represents a small-scale, growing United Nations. Carobs from Algeria, Crete, Cyprus, Greece, Israel, Italy, Portugal, Spain, Tunis, Yugoslavia, and the United States flourish agreeably side by side.

The 225 trees are budded either to one of 19 European types or to one of 51 stellar California discoveries. Tedious searching and testing among the scattered landscape plantings in California revealed these 51 rare carob seedlings which were outstanding enough to introduce into the orchard. After eight to ten years, any trees showing traits that would hinder their use commercially in Dr. Coit's opinion are destined to undergo surgery and to receive yet another variety.

Three superlative trees are now producing in the demonstration acreage: the Sfax from Tunis, and the Bolser and Santa Fe, both exceptional Californians. These carobs pride themselves on their above-average sugar content, excellent flavor, and acceptable bearing habits.

Dr. Coit, a stocky, white-haired, deeply-tanned perfectionist, knows each carob tree and its personal life like an intimate friend, thanks to his exacting records. A tree that insists on ripening its pods in late fall quickly loses favor in his comprehensive testing program. It is imperative that the crops mature in early fall before the start of California's rainy season. An extended wet spell before harvest, when pods are ripening and reaching a high sugar content, will cause fermentation. This nearly-rainless autumn required by the carob is the main reason commercial carob culture would be impractical for the southern states.

Most trees start bearing five years from budding. There is no laborious hand-picking of the crop; at maturity, the flat, pliable, green fruit becomes a rigid tobacco-brown and begins dropping to the ground.

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As nature efficiently gives these signals, heavy cloths are spread under each pod-bearing female tree and the fruit is shaken down. After several days of sun-drying to minimize the moisture content, crops can be sacked and stored indefinitely.

A mature, 25-year-old carob is capable of producing 250 pounds of pods a season. After this first quarter-century, the tree still looks forward to a lengthy life, as seen abroad, where vigorous carob centenarians are very common.

The overall crop in the Rittenhouse planting has quite naturally been below normal, since many trees have been rebudded to a second strain. Part of the pods that are harvested, however, serve as guinea pigs in endless testings. The United States Department of Agriculture's Western Utilization Research and Development Division at Albany, California, says the carob is one of the most interesting crops they have studied. Here, with the future in mind, fruit crops not widely grown in America are under constant surveillance. Thirty carob varieties from the San Diego County orchard were recently analyzed at this government laboratory, showing the pods contained up to 51 per cent sucrose and invert sugars, an exceptionally high amount compared to other tree-ripened fruits.

The University of California at Davis has also experimented with these versatile pods. As fattening foods for cattle, carob pods proved to be an equal to barley and an ideal supplement to roughage, such as hay. According to Dr. Coit, this robust tree can produce not only more, but cheaper livestock feed per acre than either barley or hay. And if the two progressive doctors have their way, American cattle will be greedily munching nutrition-packed California carob pods in the not-too-distant future.

Hungry spectators at agricultural exhibits and fairs gobble up surprising amounts of the carob crop not needed in the research field. Several grain-sacks-full of these candy-like pods were handed out as samples at the 1959 San Diego County Fair. Dr. Coit chuckles, "It's like old home week when fair-goers of Mediterranean extraction meet at our booths and have lively arm-waving conversations about their beloved carobs."

The majority of European carob-growing countries have long strengthened their economies with these serviceable brown pods, sell-

ing the largest amounts as livestock food to England, Holland and Denmark. However, in years of other crop failures the dependable carobs are prudently reserved for their own cattle.

One of the largest carob-growing areas is Italy. Here, the government restricts the exportation of pods. With no wheat, oats, or corn to speak of, the carob is a prime factor in the production of industrial alcohol so vital to their increasing factories, particularly in the growing Po Valley area.

A shipment of carob seeds is believed to have first entered the United States in 1854. Time-yellowed records generally agree that about this time an American Consular officer in Spain persuaded the Patent Office (which in those days was responsible for agricultural matters) to introduce the trees into our warmer states.

Now, after a century of lazy California sunbathing, the carob is going to work. Eleven years of planting, persuading, and proving are finally enabling Dr. Rittenhouse and Dr. Coit to break down the resistance of grain and livestock farmers who said: "When I see my neighbor making money growing carobs, I'll plant some." The demonstration orchard is now the proud "godfather" of a 400-acre carob venture in Baja, California, 13 acres of young trees in Santa Barbara, and four plantings in San Diego County, ranging from six to 85 acres.

Knowing their pioneer planting was the stimulus behind all these youthful carob orchards, these two senior citizens with an aversion to rocking chairs feel that their work and determination are paying dividends. Both "carob doctors" are quick to agree with whoever quipped: "Failure is the line of least persistence."

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Feature Photos of the Month

Actual birth of pronghorn antelope twins was photographed for the first time by J. P. Crowe. Top photo shows doe with kids 10 minutes after birth.

Photos used on this page will be of unusual rather than esthetic qualities and subject matter will be restricted to scenes, events, objects or persons related to the use, enjoyment or unique aspects of our renewable natural resources. For each picture selected, AMERICAN FORESTS will pay \$10



Photographs submitted by Dev Klapp

Two hours after giving birth the mother moves warily off to find water, her eyes searching the plain for lurking predators. The kids have been cautioned by her to lie low until her return. Pronghorn antelope kids gain the use of their legs almost immediately after birth.

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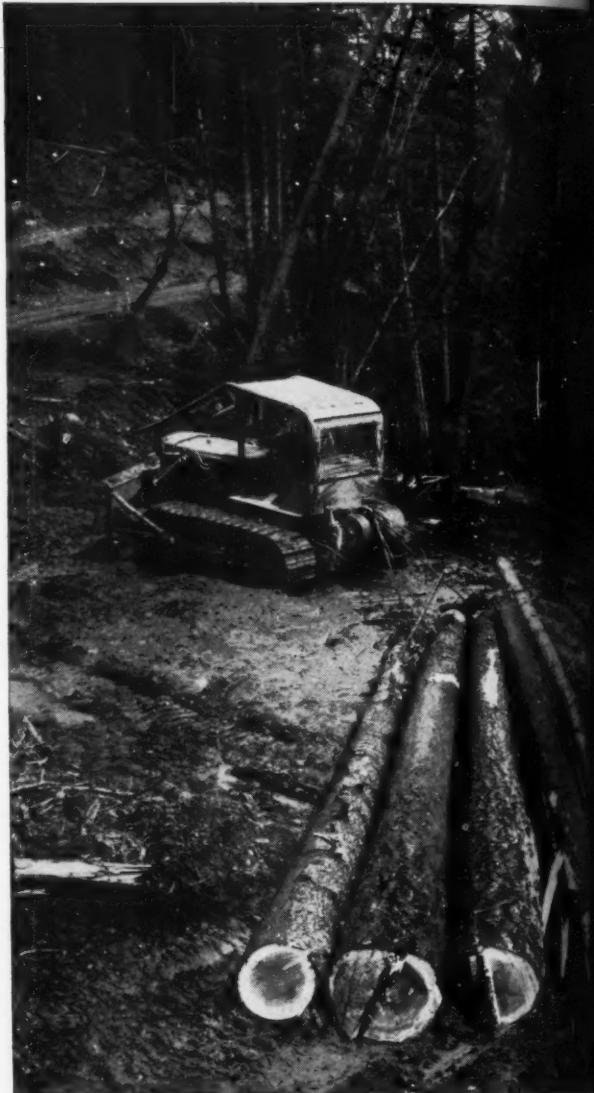
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